2019

SASP

AUA SELF-ASSESSMENT STUDY PROGRAM

American
Urological
Association
Education & Research, Inc.
Advancing Urology

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Office of Education

2019 Self-Assessment Study Program

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Special thanks and recognition go to those who gave of their time, effort, and knowledge to compose this examination. The views expressed in this educational material are not necessarily the views of the AUA but represent the opinions of the authors and the ABU Examination Committee.

2019 AUA Self-Assessment Study Program

Accreditation: The American Urological Association (AUA) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation Statement: The American Urological Association designates this enduring material for a maximum of 20.00 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in this activity.
Original Release Date: January 2019 **Expiration Date**: December 2021

Other Learners: The AUA is not accredited to offer credit to participants who are not MDs or DOs. However, the AUA will issue documentation of participation that states that the activity was certified for *AMA PRA Category 1 Credit*™.

Estimated time for study, test completion, and reference reading for each SASP is 20 hours.

Target Audience: This self-assessment program is designed for practicing urologists, Board candidates, residents and/or physician assistants.

Purpose/Need: Urologists and other health care providers need to assess their knowledge of urology. Identified gaps in this knowledge can lead to individualized, practical educational activities, which will result in improved patient care.

Method of Participation: Participants will receive a SASP booklet, answer sheet, and return envelope with cardboard insert. The SASP is designated for a maximum of 20.00 *AMA PRA Category 1 Credits*™. To earn credit, participants must read the educational material provided, designate answers for each of the 150 multiple-choice questions, and return the answer sheet for evaluation, answering 50% of the test questions correctly.

Learning Objectives: After completion of this continuing medical education activity, including this examination, participants will be able to:

- assess their knowledge of urology
- demonstrate an increased knowledge base of urology
  apply increased knowledge to improve quality of patient care
- evaluate strengths and weaknesses in urology upon review of their personalized participant profile
- develop a personalized study program

Evidence Based Content: It is the policy of the AUA to ensure that the content contained in this CME activity is valid, fair, balanced, scientifically rigorous, and free of commercial bias.

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- Introduction of a debate format with an unbiased moderator (point-counterpoint)
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Self-Assessment Study Program

INTRODUCTION

This Self-Assessment Study Program is designed to provide practicing physicians, Board candidates, and residents with an assessment of their knowledge of urology and to be a valuable learning experience which should add significantly to their store of knowledge. In addition, expectations are there would be an improvement in the quality of care delivered to their patients. Relative strengths and weaknesses in urology will be immediately apparent upon review of the personalized Participant Profile. All data concerning results of the Study Program are strictly confidential and elaborate security measures have been set up in the Office of Education to ensure that only the individual participant has access to their scores.

The Self-Assessment Study Program may be completed under either open or closed book test conditions. We urge participants to select the examination condition with which they are most comfortable. Open book implies the use of references and other resource materials. Closed book implies that reference materials are not used. To ensure a fair comparison, peer group reports are compiled separately for the "open book" and "closed book" groups.

Participants who desire CME must score a minimum of 50% and may take the SASP under either closed or open book test conditions. An additional answer sheet is provided to retake the examination for credit if the 50% benchmark has not been met.

The purpose of the program is self-assessment and learning, **NOT** an evaluation of the participant by the American Urological Association or any other agency. The examination is designed to be a valuable learning experience as well as a self-evaluation and therefore is considered to be a valid measure regardless of open or closed book conditions.

The examination items require a recall of medical knowledge and application of clinical experience. Time should be taken to consider each item carefully. We strongly recommend blocking out three to four hours to take the examination in one, or at most, two sittings. The examination should not be stretched over multiple sessions. Participants should select one answer that they feel is the best. At the completion of the exam, it is important for the learner to read very carefully the comments and recommended resources as to why the answer is deemed to be the "best answer".

Immediately after completion, participants return their answer sheet to the AUA Office of Education. **EACH WEEK** answer sheets are scored and personalized. Participant Profiles are compiled and mailed along with an evaluation or a second answer sheet to retake the exam. Certificate of Completion for CME credit is available online at AUAnet.org/University.

At the end of the year, peer group reports will be compiled. In order for scores to be included in the peer group data, completed answer sheets must be in the Office of Education before October 1, 2019. After the final weekly scoring, peer group reports will be sent to all participants who returned an answer sheet. Included in this report will be an overview of your personalized Participant Profile.

Finally, we hope that the Self-Assessment Study Program is found to be a stimulating, informative, and beneficial tool for Continuing Education as you strive for high-quality patient care.

INSTRUCTIONS

PLEASE READ CAREFULLY

I. ASSEMBLE MATERIALS

1) SASP PART I: 150 multiple-choice questions (front section of book).
   SASP PART II: Explanations, comments, and references (back section).
2) Answer Sheet: Two return address tabs should be attached to the bottom.
3) No. 2 Pencil: Answer sheets completed in ink will not be scored.
4) Exam Trustee Envelope: Should include protective cardboard.

II. PREPARE YOUR ANSWER SHEET

Please note: The stamped answer sheet tracking number (not to be confused with your AUA ID Number) is used by AUA Staff during scoring.

1) **Identification Information.** Complete the information by writing in numbers and blackening the corresponding grid numbers.

   A. **Years Out:** Write the number of years since you completed residency training. If this is less than 10 years, the first digit will be "0". If you are currently in residency, record this number as "99".
   B. **Up to 20 CME Credits:** Please mark the number of credits you wish to claim.
   C. **Book Year:** Write "19" here.
   D. **AUA ID Number:** Using leading zero(s), write your AUA Customer ID Number.
   E. **Date:** Write the date you take the exam.
   F. **Teaching Load:**
   None indicates you devote all of your time to private practice. Although may have a clinic appointment with a medical school in the area, there is no interface with medical students, residents, or interns.
   Light indicates you devote the majority of your time to private practice; however, also have a faculty appointment which requires that you participate in rounds, conferences, or lectures approximately 5-10 times per year.
   Medium indicates in addition to private practice, you have an active teaching service which requires at least weekly contact with medical students, residents or interns.
   Heavy indicates you devote the majority of your time to a faculty appointment which includes daily contact with medical students, residents, or interns in the capacity of teaching or supervising their activities.
   G. **Exam Type:**
   Open book indicates that reference material will be used during the exam.
   Closed book indicates that no reference material will be used during the exam.

2) **Return Address Tabs.** Please use a permanent address when completing these tabs. Do not detach from answer sheet. One tab will be used to send your personalized Participant Profile. The other will be used to send your Peer Group Report in late 2019.

III. BEGIN THE EXAMINATION

1) Note that the sequence of questions on the answer sheet goes down the page and not across the page.
2) Block out 3-4 hours to read and answer the exam questions.
3) Mark ONLY ONE ANSWER.
4) Erase changes completely.

IV. AFTER COMPLETING THE EXAM

1) **IMPORTANT!!!! Make a copy of your completed answer sheet.**
2) Mail your answer sheet in the envelope provided with the protective cardboard. **Do not fold the answer portion of the sheet.**
3) Allow 3-4 weeks for the return of your personalized Participant Profile and Evaluation form, or a second answer sheet to retake the exam. Certificate of Completion for CME credit is available online at AUAnet.org/University
4) Begin studying Part II of the SASP (back section of SASP booklet).

IMPORTANT!!! CME Credit Expiration Dates

For Physicians

Products include SASP Booklets, Online, and *Qstream*

Any 2019 SASP	December 31, 2021
Any 2018 SASP	December 31, 2020
Any 2017 SASP	December 31, 2019

Please note: CME Credits expire after three years of Original Release Date.

All data concerning results of the study program are strictly confidential and elaborate security measures have been set-up in the Office of Education to ensure that only the individual participant has access to his/her scores. For additional information regarding this program, please contact: American Urological Association Education and Research, Inc. (All rights reserved.) Printed in USA 01/2019.

ABU Examination Committee
Common Urology Abbreviations

ACE	Angiotensin converting enzyme
ACTH	Adenocorticotrophic hormone
ADH	Antidiuretic hormone
AFP	Alpha-fetoprotein
AIDS	Acquired immune deficiency syndrome
beta-hCG	Beta human chorionic gonadotropin
BCG	Bacillus Calmette-Guerin
BEP	Bleomycin, etoposide & cisplatin
BPH	Benign prostatic hyperplasia
CIC	Clean intermittent catheterization
CAH	Congenital adrenal hyperplasia
CIS	Carcinoma in situ
CMG	Cystometrogram
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
CVA	Cerebrovascular accident
DDAVP	Vasopressin synthetic analog
DES	Diethylstilbestrol
DMSA	Dimercaptosuccinic acid
DRE	Digital rectal exam
DTPA	Tc-99m Pentetate
DVT	Deep venous thrombosis
EHL	Electrohydraulic lithotripsy
EKG	Electrocardiogram
EMG	Electromyogram
ESRD	End-stage renal disease
5-FU	5-fluorouracil
FSH	Follicle stimulating hormone
GFR	Glomerular filtration rate
GnRH	Gonadotropin releasing hormone
HIV	Human immuno deficiency virus
HPF	High power field
^{125}I	Iodine^{125}
ICSI	Intracytoplasmic sperm injection
I.V.	Intravenous
IVC	Inferior vena cava
IVP	Intravenous pyelogram
IRB	Institutional Review Board
KUB	Kidney, ureter, bladder
LDH	Lactate dehydrogenase
LH	Luteinizing hormone
LH-RH	Luteinizing hormone releasing hormone
LPP	Leak point pressure
LR/NS/D5W	Lactated Ringer's/Normal saline Dextrose 5% water
LUTS	Lower urinary tract symptoms
M-VAC	Methotrexate, vinblastine, Adriamycin (doxorubicin), cisplatin
MAG-3	Mercaptoacetylglycine

MIBG	Iodine-131-meta-iodobenzylguanidine
MRI	Magnetic resonance imaging
MVC	Motor vehicle collision
NPO	Nothing by mouth
NSAIDS	Nonsteroidal anti-inflammatory drugs
NSGCT	Nonseminomatous germ cell tumor
PCNL	Percutaneous nephrolithotomy
PDE-5	Phosphodiesterol inhibitor 5
PET	Positron emission tomography
PGE-1	Prostaglandin E-1
PIN	Prostatic intraepithelial neoplasia
PSA	Prostate specific antigen
PT	Prothrombin time
PTT	Partial thromboplastin time
PUV	Posterior urethral valve
PVR	Postvoid residual
QD, QHS	Dosing
XRT	Radiation therapy
RBC	Red blood cell count
RCC	Renal cell carcinoma
LR/NS/D5W	Lactated Ringer's/Normal saline Dextrose 5% water
RPLND	Retroperitoneal lymph node dissection
RTA	Renal tubular acidosis
SIADH	Syndrome of inappropriate antidiuretic hormone
SSRI	Selective serotonin reuptake inhibitors
SWL	Shock wave lithotripsy
TPN	Total parenteral nutrition
TRUS	Transrectal ultrasonography
TUIP	Transurethral incision of prostate
TUMT	Transurethral microwave therapy
TUNA	Transurethral needle ablation
TUR	Transurethral resection
TURP	Transurethral resection of prostate
TURBT	Transurethral resection of bladder tumor
UPJ	Ureteropelvic junction
UTI	Urinary tract infection
VCUG	Voiding cystourethrogram
VDRL	Venereal disease research laboratory
VEGF	Vascular endothelial growth factor
VHL	Von Hippel - Lindau
VUR	Vesicoureteral reflux
WBC	White blood cell count
XRT	Radiation therapy

Normal Laboratory Values

General Chemistry

Electrolytes

Na	135 – 145 mEq/L
K	3.5 – 5.0 mEq/L
Cl	120 – 130 mEq/L
HO_3	22 – 26 mEq/L
Ca	8.5 – 10.5 mg/dL
PO_4	2.6 – 4.5 mg/dL

Blood Urea Nitrogen (BUN)	8 – 20 mg/dL
Creatinine	0.5 – 1.5 mg/dL
Creatinine Clearance	50 – 125 mL/min
Glucose (fasting)	70 – 100 mg/dL
Prostate Specific Antigen (PSA)	< 4 ng/mL
Serum Albumin	3.4 – 5.4 gm/dL

Acid Phosphatase	0 – 0.8 U/L
Alanine aminotransferase (SGPT)	10 – 55 U/L
Alkaline phosphatase	45 – 115 U/L
Alpha-feto protein (AFP)	0 – 10 IU/mL
Beta-hCG	0 – 10 mIU/mL
Amylase	50 – 120 U/L
Bilirubin	0 – 0.4 mg/dL
Lactate dehydrogenase (LDH)	110 – 210 U/L
Uric acid	3.6 – 8.5 mg/dL

Hemoglobin	13 – 18 g/dL
White Blood Count (WBC)	5 – 10,000/cu mm
Platelets	150 – 350,000/cu mm

Endocrine

Aldosterone	4 – 31 ng/dL
Calcitonin	0 – 28 pg/mL
Catecholamines	< 1000 ng/L
Cortisol	0 – 10 µg/dL
Epinephrine	0 – 110 pg/mL
17-Hydroxysteroids	3 – 14 mg/day
17-Ketosteroids	8 – 20 mg/day
Metanephrines	0 – 0.9 mg/day
Parathyroid Hormone (PTH)	10 – 60 pg/mL
Plasma Renin Activity (PRA)	0.5 – 1.6 ng/mL/hr
Testosterone	300 – 1000 ng/dL
Vanillylmandellic acid (VMA)	1.4 – 6.5 mg/day

Follicle Stimulating Hormone (FSH)	1 – 15 mIU/L
Luteinizing Hormone (LH)	3 – 18 mIU/L

Arterial Blood Gases

PO_2	75 – 100 mmHg
PCO_2	35 – 45 mmHg

A 78-year-old malnourished woman with a history of prior pelvic radiation for cervical cancer has a radical cystectomy and ileal conduit with bilateral ureteral stents for urothelial cancer. Four days postoperatively, her urine output decreases with a marked increase in output from her abdominal drain. The next step is:

A. TPN.
B. placement of a catheter into the ileal stoma.
C. bilateral percutaneous nephrostomy tube placement.
D. revision of the ureteroileal anastomoses.
E. excision of the ileal conduit and replacement with a transverse colon conduit.

2. A 24-year-old man has a transpubic urethroplasty in the extended lithotomy position. Postoperatively, he has anteromedial thigh paresthesia and right lower extremity weakness. The nerve most likely injured is the:

A. femoral.
B. obturator.
C. genitofemoral.
D. sciatic.
E. ilioinguinal.

3. A 52-year-old man with a history of lung cancer has a 5 cm adrenal mass with an attenuation of 45 Hounsfield units noted on follow-up non-contrast CT scan. Metastatic evaluation is otherwise negative. Metabolic evaluation is normal. The next step is:

A. repeat imaging and metabolic evaluation in six months.
B. MRI scan.
C. MIBG scan.
D. percutaneous needle biopsy.
E. adrenalectomy.

4. A 45-year-old hypertensive man with a family history of renal failure is noted to have bilaterally enlarged cystic kidneys and hepatic and pancreatic cysts during an abdominal ultrasonographic examination for abdominal/flank pain and fever. He also complains of marked dysuria. He is admitted with a presumptive diagnosis of pyelonephritis. Urine culture has been sent. Initial antibiotic therapy should be:

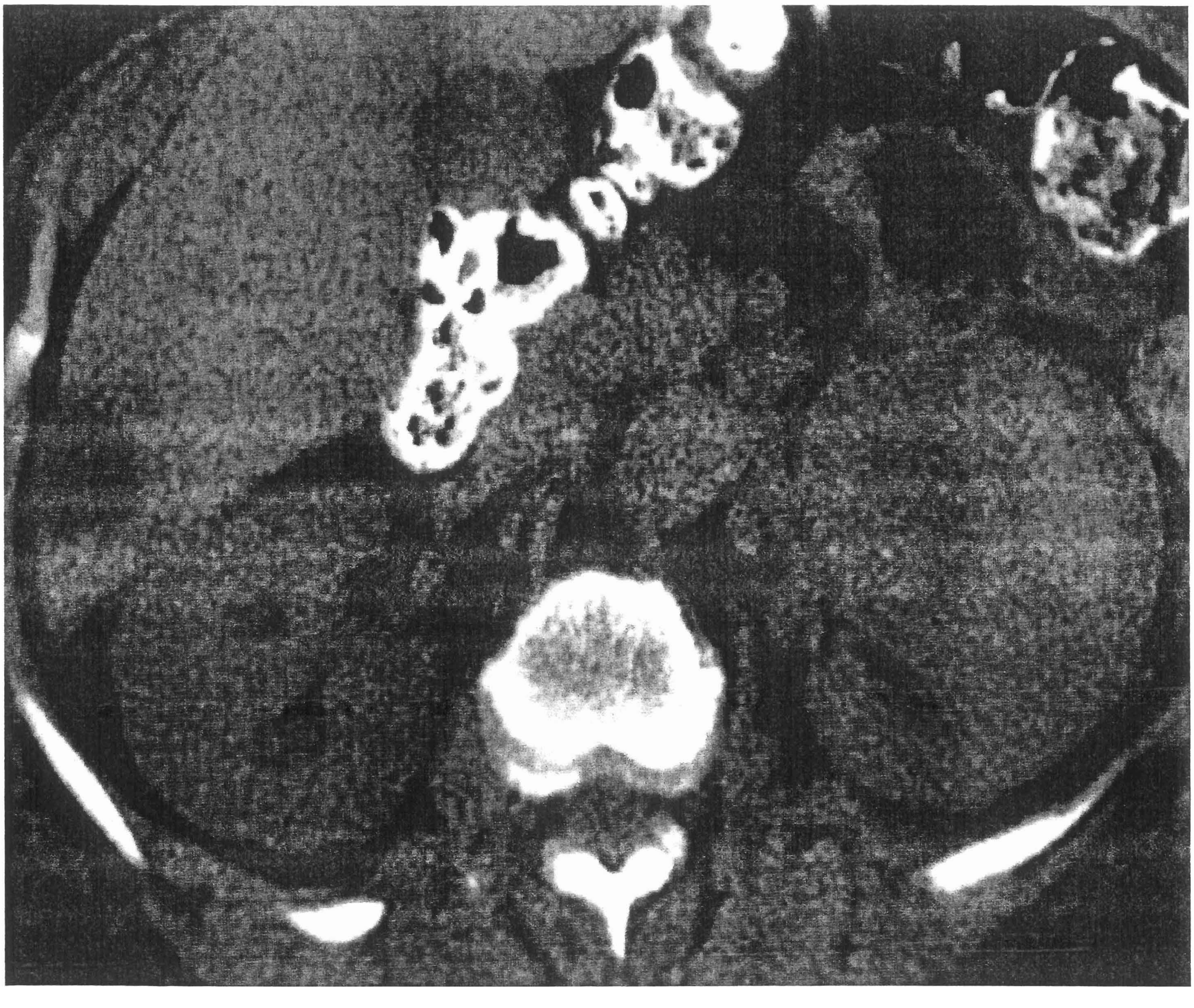
A. gentamicin.
B. ampicillin.
C. cephalexin.
D. ciprofloxacin.
E. nitrofurantoin.

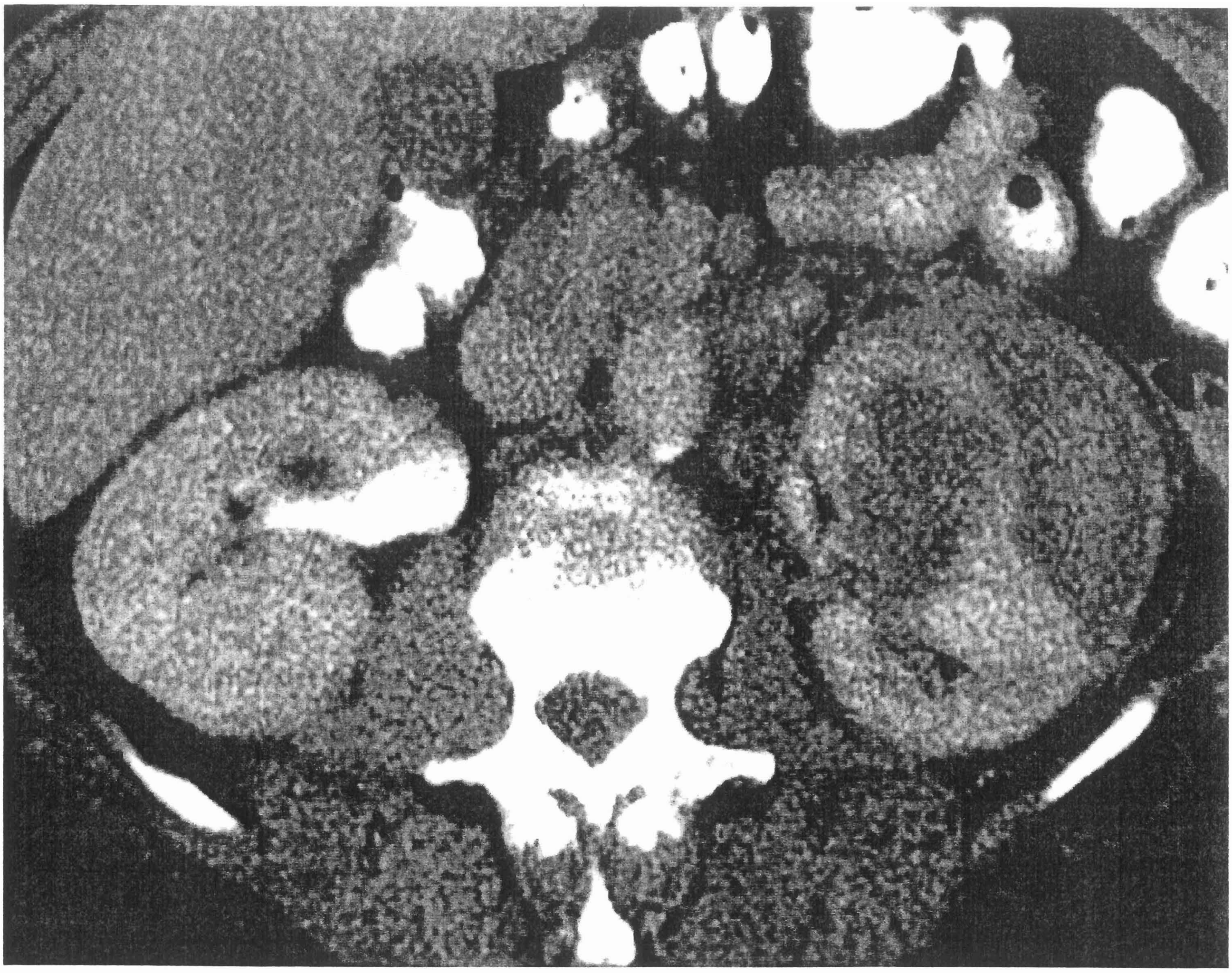
5. Five months after continent cutaneous diversion, a 58-year-old woman has persistent low-grade fevers, malaise, and mild abdominal discomfort over the diversion. Her creatinine is 1.2 mg/dL, and a CT scan shows mild bilateral hydronephrosis. Urine culture is positive for E. coli. After treating the infection, the next step is:

   A. urine acidification.
   B. program of mechanical pouch irrigation.
   C. prophylactic antibiotic administration.
   D. increase size of drainage catheter.
   E. pouchogram to evaluate reflux.

6. A 57-year-old woman has a CT scan for severe left flank pain. Pre- and post-contrast CT scans are shown. The next step is:

   A. repeat CT scan in three months.
   B. percutaneous nephrostomy tube.
   C. percutaneous drainage.
   D. renal biopsy.
   E. radical nephrectomy.





7. A debilitated 85-year-old woman with an ileal conduit has recurrent sepsis due to pyocystis despite weekly bladder irrigations with antibiotic solution. Cystoscopy demonstrates no evidence of malignancy. The next step is:

A. prophylactic oral antibiotics.
B. intravesical silver nitrate.
C. suprapubic cystostomy.
D. vaginal vesicostomy.
E. cystectomy.

8. A 75-year-old man has severe bleeding from radiation cystitis requiring transfusion. Cystogram reveals no reflux. Previous therapeutic measures have failed including fulguration, clot evacuation, and irrigations with silver nitrate and 1% alum. The next step is:

A. ileal loop urinary diversion.
B. instillation of 10% formalin.
C. instillation of 5% formaldehyde.
D. instillation of 2% formalin.
E. internal iliac artery embolization.

9. A 38-year-old azoospermic man with secondary infertility has an ejaculate volume of 0.3 mL. Post-ejaculate urine contains no sperm. Serum testosterone and FSH are normal, both vasa are palpable, and testicular volume is normal. TRUS reveals a normal prostate, ejaculatory ducts, and dilated seminal vesicles. The next step is:

A. ejaculatory duct cannulation.
B. testis biopsy.
C. vasography.
D. seminal vesicle aspiration.
E. renal ultrasound.

10. After ligation of the adrenal vein during removal of a right adrenal pheochromocytoma, there is a precipitous fall in blood pressure. The next step is:

A. blood transfusion.
B. epinephrine.
C. norepinephrine.
D. dopamine.
E. saline bolus.

11. The safest chemotherapeutic agent for use in patients who have received extensive prior bone marrow radiation is:

A. cisplatin.
B. methotrexate.
C. vinblastine.
D. bleomycin.
E. Adriamycin®.

12. The inferior mesenteric artery is ligated during a RPLND for testis cancer. Blood supply to the sigmoid colon is now derived from which artery:

A. right colic.
B. superior hemorrhoidal.
C. middle hemorrhoidal.
D. sigmoid.
E. middle sacral.

13. A newborn girl has an abdominal mass. An interlabial bulging mass is also noted. Ultrasound shows a cystic mass anterior to the rectum that does not change with bladder catheterization. The most likely diagnosis is:

A. imperforate hymen.
B. rhabdomyosarcoma.
C. sacrococcygeal teratoma.
D. Gartner's duct cyst.
E. prolapsed ureterocele.

14. Calcium oxalate calculi appear on MRI scan as:

A. high intensity T1-weighted image.
B. low intensity T2-weighted image.
C. low core intensity image.
D. poorly visualized image.
E. bright bone-like signal image.

15. A two-month-old boy has a 4 cm right adrenal mass. Biopsy reveals neuroblastoma. There are metastases to the skin, liver, and bone marrow. Skeletal survey is negative. The next step is:

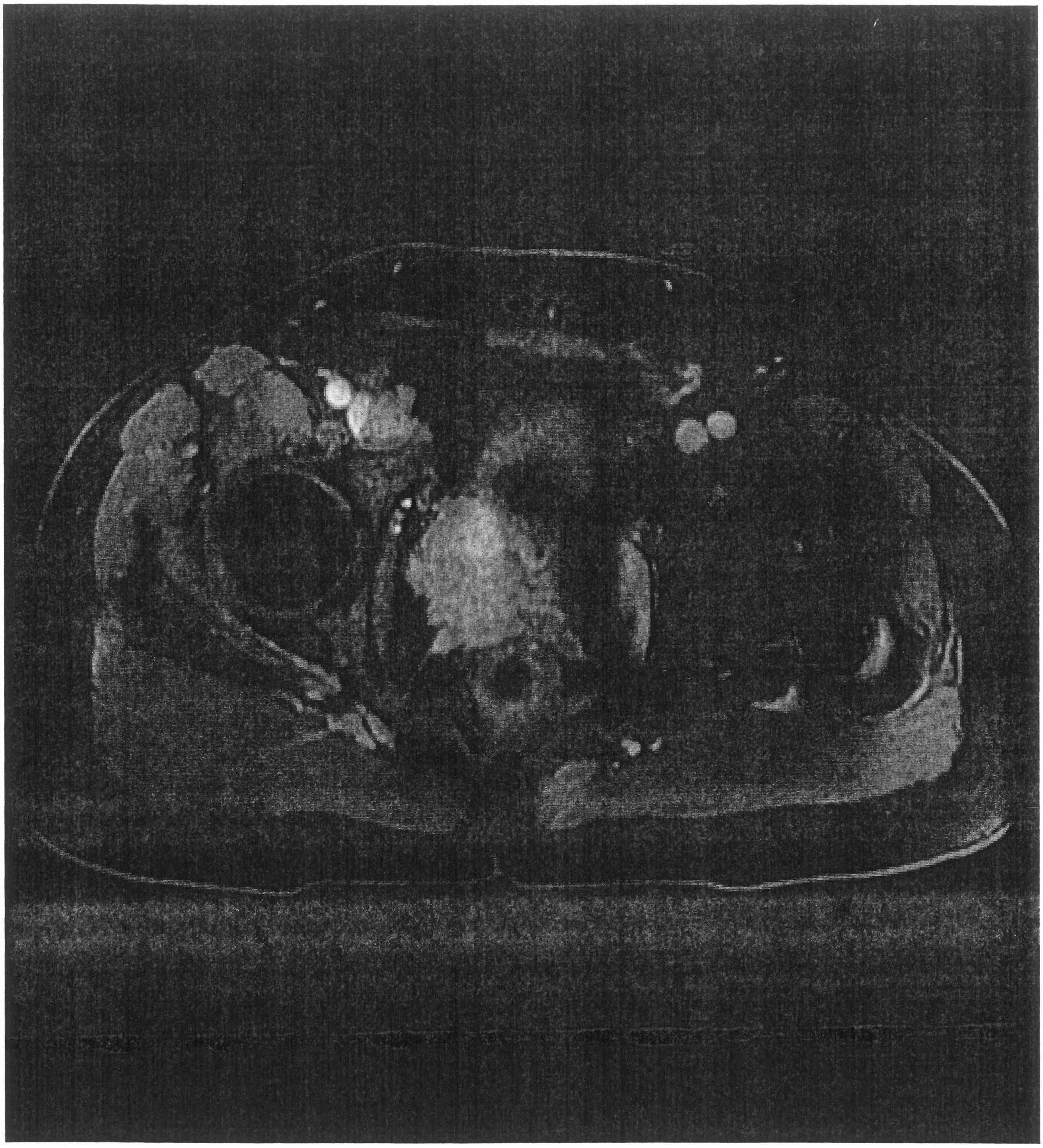
A. observation.
B. flank XRT.
C. multi-agent chemotherapy.
D. right adrenalectomy.
E. total body XRT and bone marrow transplant.

16. The antibiotic which can be used in a patient with a history of an anaphylactic reaction to penicillin is:

A. ceftriaxone.
B. imipenem.
C. ceftazidime.
D. aztreonam.
E. ampicillin.

17. A healthy 60-year-old man is diagnosed with Gleason 9 (4+5) prostate cancer. CT abdomen and bone scan are negative. MRI is shown. The next step is:

A. fluciclovine F-18 PET (Axumin™).
B. leuprolide acetate and docetaxel.
C. leuprolide acetate and XRT.
D. radical prostatectomy.
E. radical cystoprostatectomy.



18. In girls who have suffered sexual abuse, the most frequent finding on physical examination is:

A. no abnormality.
B. tear of the labia minora.
C. bruising of the inner thigh.
D. laxity of the anal sphincter.
E. enlargement of the hymenal opening.

19. A 26-year-old man has had four ureteroscopic stone extractions over the past three years. All stones were pure calcium phosphate (brushite). He denies prior UTIs. The most likely etiology for his stone disease is:

A. hyperuricosuria.
B. resorptive hypercalciuria.
C. phosphate renal leak.
D. renal hypercalciuria.
E. excess meat consumption.

20. A 55-year-old man has mild right flank pain eight weeks after an aorto-iliac vascular graft. Serum creatinine is 1.4 mg/dL, WBC 12,000/cu mm, and urine culture is sterile. Renal ultrasound shows moderate right hydronephrosis, and CT scan demonstrates the graft is posterior to the right ureter. The next step is:

A. percutaneous nephrostomy.
B. oral steroid therapy.
C. transureteroureterostomy.
D. nephrectomy.
E. ureterolysis.

21. While performing a videourodynamic study in a three-year-old child, the recommended rate of bladder filling is:

A. 10 mL/min.
B. 20 mL/min.
C. 30 mL/min.
D. 40 mL/min.
E. 50 mL/min.

22. A 40-year-old woman has a bilateral adrenalectomy for Cushing's disease with complete resolution of her symptoms. Her replacement therapy consists of cortisone and fludrocortisone. Three years later, she complains of visual disturbances and has skin hyperpigmentation. The most likely explanation is:

A. inadequate cortisone replacement.
B. pituitary adenoma.
C. excessive cortisone replacement.
D. ectopic ACTH production.
E. ectopic melanocyte-stimulating hormone secretion.

23. In women with invasive carcinoma of the proximal urethra, the primary lymphatic nodes for metastatic disease are the:

A. superficial inguinal.
B. deep inguinal.
C. external iliac.
D. hypogastric.
E. obturator.

24. A 24-year-old woman had an ileocystoplasty for neurogenic bladder four years ago. During an emergency cesarean section, the vascular pedicle to the cystoplasty segment is divided. The next step is:

A. revascularization of the pedicle.
B. excise ileal patch; immediate ileal augmentation.
C. excise ileal patch; delayed sigmoid augmentation.
D. place suprapubic tube and drain.
E. observation with follow-up urodynamics.

25. The most common metabolic disturbance that occurs in a patient with an ileal conduit is:

A. hyperkalemic, hyperchloremic, metabolic acidosis.
B. hyponatremic, hypochloremic, metabolic acidosis.
C. hypochloremic, hypokalemic, metabolic alkalosis.
D. hypokalemic, hyperchloremic, metabolic acidosis.
E. hyponatremic, hypochloremic, metabolic alkalosis.

26. Renovascular hypertension that is likely to respond to angiographic or surgical intervention is characterized by:

A. marked elevation in plasma renin values.
B. elevation of renal vein over inferior vena caval concentrations of renin by at least 25%.
C. elevation of ipsilateral renal vein renin by at least 50% over peripheral and contralateral renal vein renin.
D. elevation of ipsilateral renal vein renin by 50% over peripheral plasma renin, and by 25% over the contralateral renal vein renin.
E. marked elevation of ipsilateral and contralateral renal vein renin as well as peripheral plasma renin.

27. A 27-year-old woman at 30 weeks of gestation has gross hematuria. Ultrasound shows a normal fetus and a maternal bladder lesion. Cystoscopy reveals a 3 cm pedunculated papillary lesion. The remainder of the bladder is normal. The next step is:

A. immediate transurethral resection.
B. early delivery followed by transurethral resection.
C. transurethral resection after term delivery.
D. remove tumor with cup biopsy forceps at initial cystoscopy.
E. immediate tumor ablation with Nd:YAG laser.

28. A 31-year-old woman has acute cystitis. The most appropriate treatment is three days of:

A. fosfomycin.
B. nitrofurantoin.
C. ampicillin.
D. ciprofloxacin.
E. trimethoprim/sulfamethoxazole.

29. A 67-year-old man with a clinical stage T2bN0M0 Gleason 7 (3+4) prostate cancer with a PSA of 7.8 ng/mL is treated with 78 Gy external beam XRT. His PSA nadirs to 0.8 ng/mL six months after therapy. Six months later, he is asymptomatic, has a normal DRE, and a PSA of 6.5 ng/mL. The most likely explanation for the elevated PSA level is:

A. prostatic infarct.
B. persistent prostate cancer.
C. PSA bounce effect.
D. radiation-induced prostatitis.
E. insufficient period of observation after therapy.

30. A ten-month-old boy with a vesicostomy for posterior urethral valves develops increasing bilateral hydronephrosis and a full bladder on ultrasound. The next step is:

A. diuretic renogram.
B. enterocystoplasty.
C. calibrate vesicostomy.
D. VCUG.
E. bilateral cutaneous ureterostomy.

31. A 24-year-old man is hit in the scrotum with a baseball. Two hours later, physical exam reveals a very firm, smooth, and painful testicle. Ultrasound shows a heterogeneous avascular intratesticular mass. The next step is:

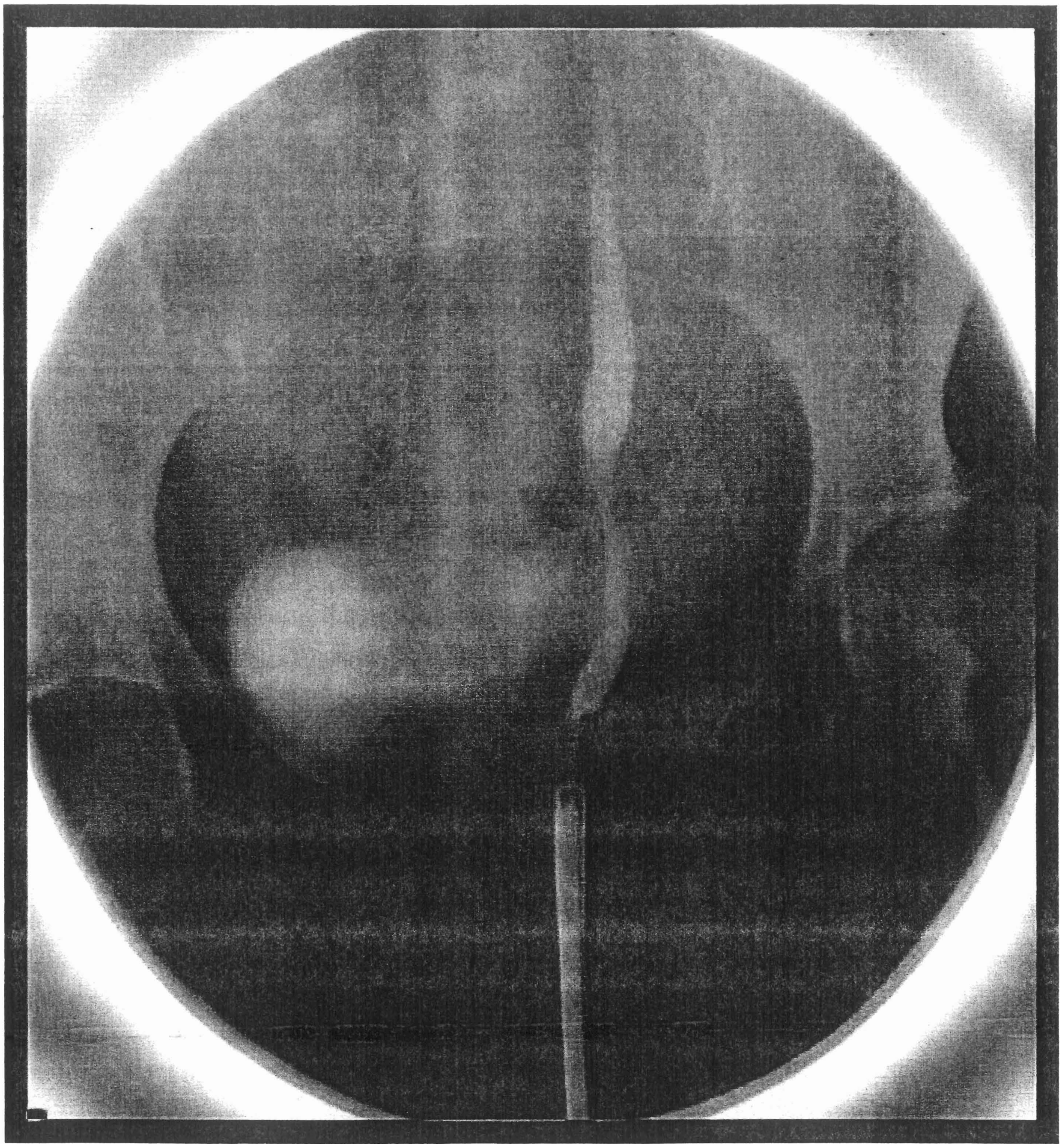
A. serial physical exams and ultrasound.
B. needle aspiration of the mass.
C. testicular exploration.
D. scrotal orchiectomy.
E. inguinal orchiectomy.

32. A patient elects SWL for treatment of a symptomatic, partially obstructing radiopaque 7 mm proximal ureteral calculus. The next step is:

A. push back of the stone into the renal pelvis prior to SWL.
B. placement of a stent alongside the stone prior to SWL.
C. placement of a nephrostomy tube prior to SWL.
D. in-situ SWL treatment.
E. placement of a ureteral catheter to the level of the stone.

33. A 58-year-old woman has continuous urinary incontinence two weeks after elective robotic hysterectomy. VCUG is normal and retrograde ureterogram is shown. The next step is:

A. observation.
B. urethral catheter drainage.
C. double-J stent placement.
D. percutaneous nephrostomy.
E. ureteroneocystostomy.



34. A 64-year-old man has dysuria, frequency, and hematuria following removal of a urethral catheter after radical prostatectomy. He is allergic to penicillin. A urine culture at the time of catheter removal grew Enterococcus faecalis. The best treatment is:

A. cephalexin.
B. gentamicin.
C. ciprofloxacin.
D. clindamycin.
E. nitrofurantoin.

35. A 25-year-old man has a left scrotal exploration and subsequent orchiectomy. Pathologic and staging evaluation reveal a NSGCT clinical stage 2B. After full-dose platinum-based chemotherapy, he has a residual 3 cm para-aortic mass. The next steps are RPLND and:

A. scrotal XRT.
B. wide excision of the scrotal scar and spermatic cord remnant.
C. removal of the spermatic cord remnant.
D. left hemiscrotectomy and removal of spermatic cord remnant.
E. left hemiscrotectomy, removal of the spermatic cord remnant, and ipsilateral ilioinguinal node dissection.

36. A 22-year-old woman requests a copy of her medical records. Your office has a right to deny the request if the records:

A. pertain to billing matters.
B. pertain to medical information.
C. pertain to psychotherapy.
D. are electronically stored.
E. are more than five years old.

37. A 32-year-old man with inflammatory bowel disease has passed two calcium oxalate stones. Twenty-four hour urine collection reveals elevated oxalate. The next step is:

A. restrict oxalate.
B. restrict sodium.
C. calcium.
D. thiazides.
E. potassium citrate.

38. A two-month-old girl with prenatal hydronephrosis is on antibiotic prophylaxis and has a serum creatinine of 0.3 mg/dL. Bilateral hydroureteronephrosis is identified on ultrasound and VCUG shows no VUR. MAG-3 diuretic renal scan reveals equal function with a T 1/2 of 21 minutes on the right and 87 minutes on the left. The next step is:

A. left cutaneous ureterostomy.
B. left ureteral reimplantation.
C. bilateral ureterostomy.
D. repeat ultrasound in one month.
E. MR urogram.

39. A 62-year-old woman with multiple sclerosis has persistent urinary urgency and frequency. Pressure flow urodynamics reveal detrusor overactivity and increased pelvic floor EMG activity during volitional voiding. An MRI scan will most likely reveal evidence of demyelination:

A. of the cerebral cortex.
B. of the cerebellum.
C. between the pons and sacral spinal cord.
D. between the conus medullaris and the cauda equina.
E. between the sacral spinal cord and the bladder.

40. A 39-year-old man with VHL disease has a 4 cm left upper pole renal mass and several simple appearing lower pole renal cysts. The right kidney also has several cysts as well as two 1.2 cm lower pole solid masses. Renal function is normal. The next step is:

A. radiofrequency ablation of left renal mass.
B. staged bilateral radiofrequency ablation.
C. left radical nephrectomy.
D. left renal exploration with resection of solid mass and renal cysts.
E. bilateral partial nephrectomies.

41. A 43-year-old man desires a biological child with his 38-year-old wife. Both testes are 5 cm in longitudinal axis and firm on physical examination. Two semen analyses show azoospermia with volumes of 2.1 and 2.3 mL. FSH is 2.8 IU/L. The next step is:

A. adoption.
B. TRUS.
C. evaluation of his wife.
D. testicular sperm extraction with ICSI.
E. microsurgical scrotal ductal reconstruction.

42. A 62-year-old man has a radical prostatectomy for prostate cancer. Histology reveals a Gleason 9 (4+5), pT3aN1Mx cancer with negative surgical margins. His post-prostatectomy PSA is < 0.1 ng/mL. To minimize the risk of relapse, the next step is:

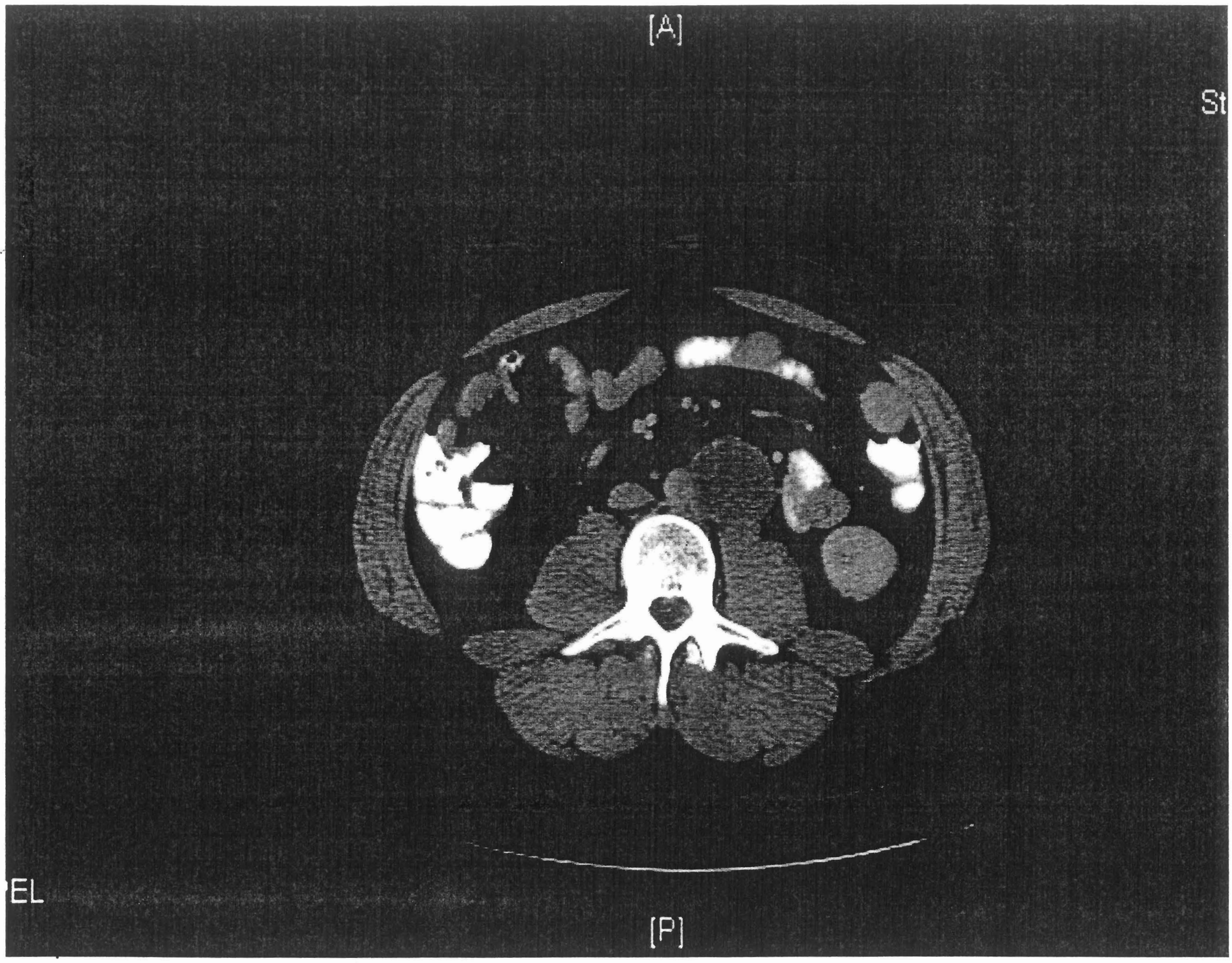
A. adjuvant docetaxel.
B. external beam XRT.
C. LH-RH agonist therapy for six months.
D. lifelong LH-RH agonist therapy.
E. LH-RH agonist therapy for six months and external beam XRT.

43. In a patient with a functionally normal neobladder, typical urodynamic findings during voiding are:

A. Pabd ↑, Pves ↔, Purethra ↑.
B. Pabd ↑, Pves ↑, Purethra ↓.
C. Pabd ↔, Pves ↓, Purethra ↓.
D. Pabd ↔, Pves ↑, Purethra ↑.
E. Pabd ↔, Pves ↔, Purethra ↓.

44. A 28-year-old man receives salvage chemotherapy and a stem cell transplant for metastatic NSGCT. His markers have normalized and his CT scan is shown. The next step is:

A. observation.
B. PET scan.
C. XRT.
D. percutaneous biopsy.
E. RPLND.



45. A four-year-old uncircumcised boy has a two-week history of foreskin swelling with urination. The retained urine under the foreskin drains slowly following completion of voiding. There is no dysuria or hematuria. Physical examination reveals mild erythema of the distal foreskin and a phimotic ring. The meatus cannot be visualized. The next step is:

A. observation.
B. sitz baths.
C. topical steroid ointment.
D. dorsal slit.
E. circumcision.

46. Vascular reconstruction is recommended in hypertensive patients with:

A. bilateral medial fibroplasia.
B. bilateral ostial atherosclerotic lesions and poorly controlled hypertension on two medications.
C. unilateral 85% renal artery stenosis and a serum creatinine of 1.5 mg/dL.
D. bilateral 70% renal artery stenosis and a serum creatinine of 4.5 mg/dL.
E. bilateral 80% renal artery stenosis and serum creatinine of 2.0 mg/dL.

47. Compared to an electrohydraulic lithotriptor, the factor most likely to contribute to decreased pain using an electromagnetic lithotriptor is the:

A. amount of kilovolts (kV) utilized.
B. lack of an electrical spark.
C. avoidance of a water bath.
D. increased entry surface area of the energy.
E. decreased size of the focal zone.

48. A one-month-old girl with a history of glucose-6-phosphate dehydrogenase deficiency has a febrile UTI. Urine culture grows Enterococcus and she is treated with amoxicillin. VCUG shows bilateral grade 4 VUR. The most appropriate prophylactic antibiotic is:

A. amoxicillin.
B. amoxicillin/clavulanate K (Augmentin®).
C. trimethoprim/sulfamethoxazole.
D. nitrofurantoin.
E. cephalexin.

49. A 35-year-old man has primary infertility. On physical examination, neither vas deferens is palpable and each testis is 34 mL in volume. Semen analysis reveals a 0.3 mL volume and azoospermia. The man and his wife would like to pursue all options for parenthood. The next step is:

A. scrotal ultrasound.
B. Y-chromosome microdeletion analysis and karyotype.
C. cystic fibrosis mutation analysis on both partners.
D. diagnostic testicular biopsy with scrotal exploration.
E. donor sperm intrauterine insemination.

50. The starting dose of a PDE5 inhibitor should be lowered in a patient taking:

A. indinavir.
B. fluconazole.
C. warfarin.
D. doxycycline.
E. tacrolimus.

51. During PCNL, a collecting system perforation is noted. The first sign of significant extravasation of irrigant into the peritoneal cavity is:

A. hypotension.
B. hypercarbia.
C. abdominal distension.
D. narrowed pulse pressures.
E. increasing ventilatory pressures.

52. A 30-year-old man has persistent hypertension and paroxysmal headaches. Plasma catecholamine levels are 1100 ng/L. Three hours after a 0.3 mg single oral dose of clonidine, catecholamine levels are 400 ng/L. The most likely diagnosis is:

A. renal artery stenosis.
B. pheochromocytoma.
C. essential hypertension.
D. adrenal hyperplasia.
E. idiopathic hyperaldosteronism.

53. In penile reconstruction after amputation, microsurgical re-anastomosis of the dorsal artery and vein is most important in preventing:

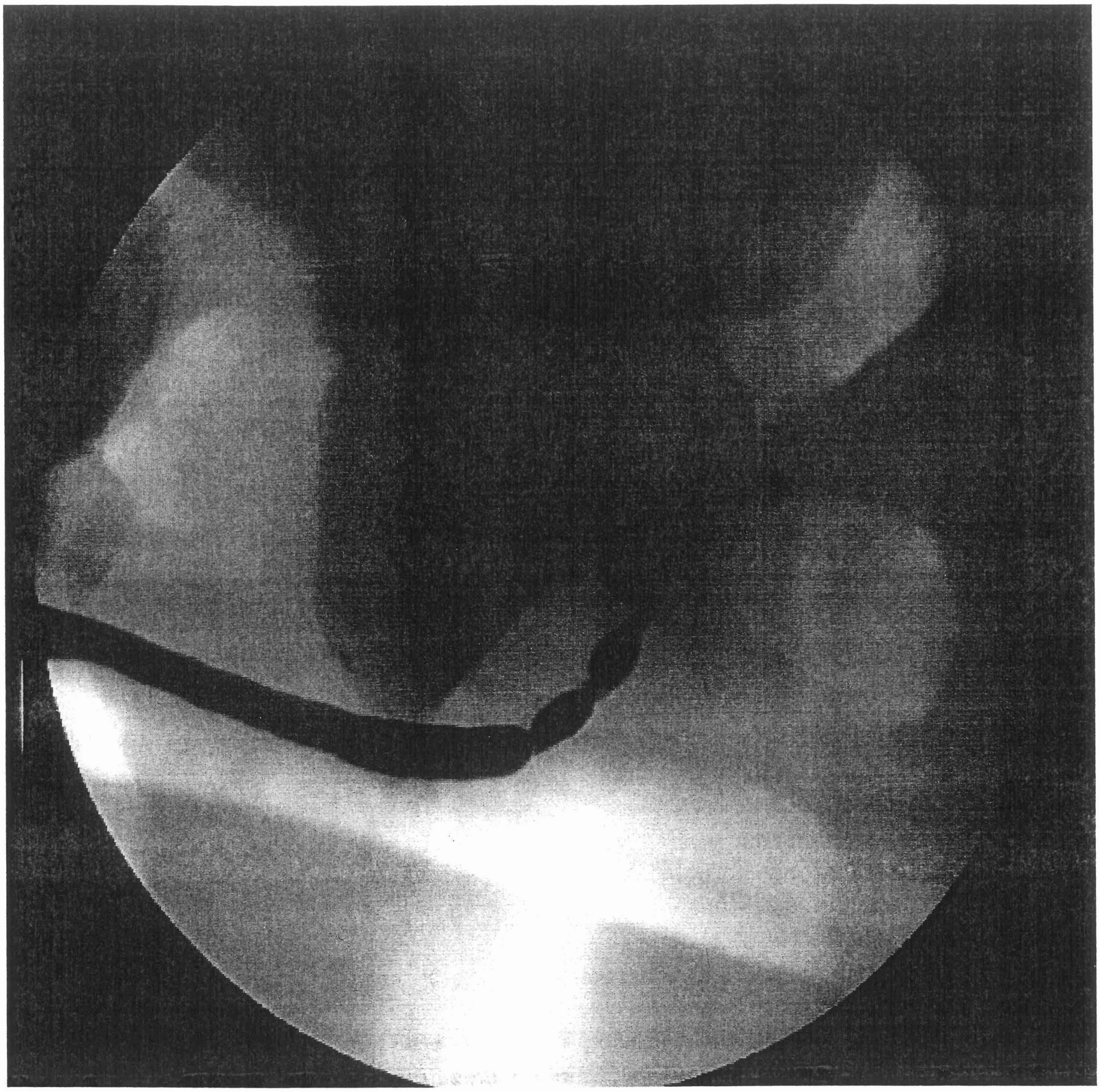
A. glans atrophy.
B. urethral stricture.
C. erectile dysfunction.
D. skin loss.
E. penile numbness.

54. A 22-year-old sexually active woman complains of vulvovaginal itching and flu-like symptoms. On physical examination, she is afebrile and the only finding is a fissure in the left labia majora with no vaginal discharge. Urinalysis is negative. The treatment that can prevent recurrence of her symptoms is:

A. hydrocortisone cream.
B. diphenhydramine cream.
C. intramuscular ceftriaxone.
D. imiquimod cream.
E. oral acyclovir.

55. A 58-year-old man has a weak urinary stream. There is no history of lower urinary tract instrumentation or trauma. Retrograde urethrogram is shown. The next step is:

A. antegrade urethrogram.
B. direct vision urethrotomy (DVIU).
C. excision and primary anastomosis.
D. urethroplasty with graft or flap.
E. perineal urethrostomy and two stage repair.



56. A two-month-old boy is noted to have an asymmetrical skin dimple over his upper sacrum on a physical examination. The next step is:

A. observation.
B. spinal ultrasound.
C. VCUG.
D. spinal MRI scan.
E. urodynamic study.

57. A three-year-old boy with spina bifida and a neurogenic bladder has early filling bilateral grade 2 VUR. His bladder capacity is 170 mL with low detrusor pressure. DMSA shows bilateral renal scars. He is on CIC four times daily and has recurrent febrile UTIs while on prophylactic antibiotics. The next steps are to change prophylaxis and:

A. begin dual antibiotic prophylaxis.
B. start antimuscarinic medication.
C. increase frequency of CIC.
D. vesicostomy.
E. surgical repair of VUR.

58. A 72-year-old man with metastatic prostate cancer complains of back pain. MRI scan reveals multiple spinal lesions without spinal cord involvement. The best immediate treatment is:

A. LH-RH antagonist.
B. LH-RH agonist.
C. anti-androgen monotherapy.
D. oral estrogen.
E. combination LH-RH agonist and anti-androgen.

59. A 33-year-old woman has dysuria and fever. Urinalysis is leukocyte esterase positive and nitrite negative. There are 10 RBC and 30 WBC/hpf on microscopy. Urine culture will likely grow:

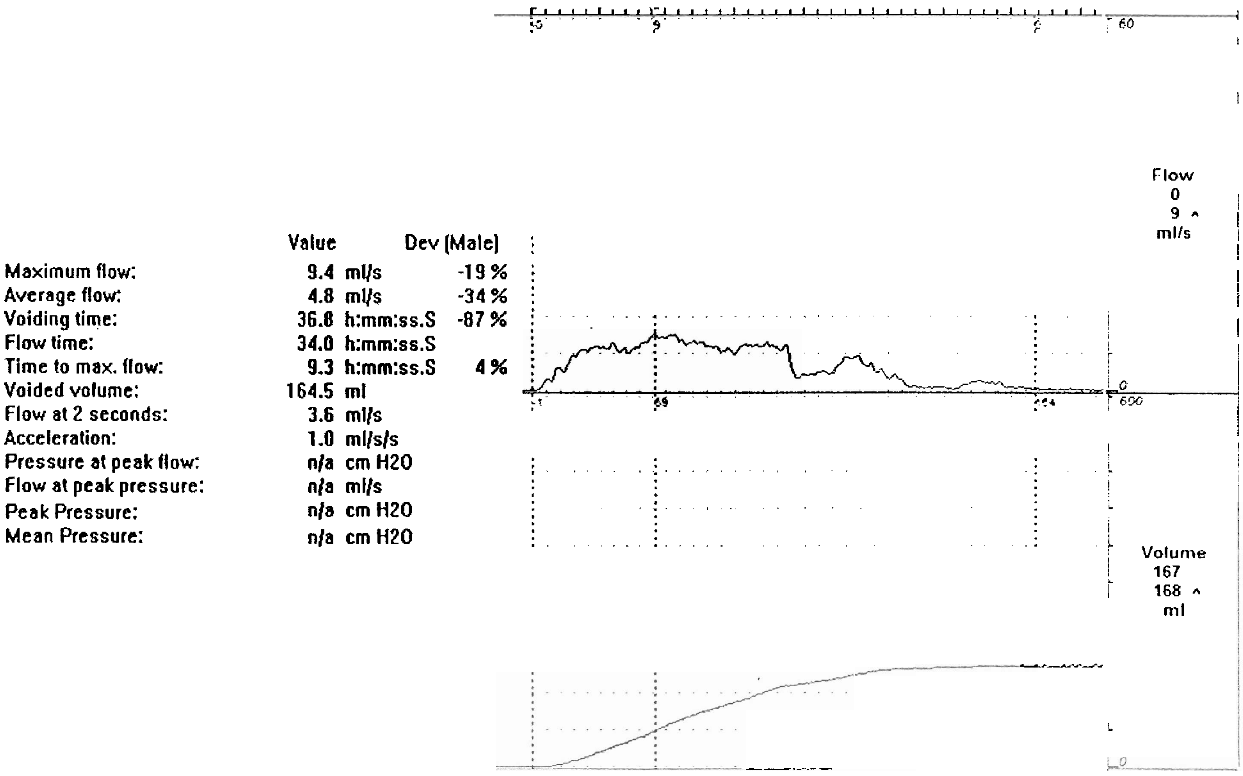
A. Escherichia coli.
B. Pseudomonas aeruginosa.
C. Serratia marcescens.
D. Klebsiella oxytoca.
E. Proteus mirabilis.

60. A 27-year-old man and his 27-year-old wife have not conceived after four months of attempts. A semen analysis is normal while a sperm DNA fragmentation test reveals high levels of DNA fragmentation. She has been cleared by her gynecologist and his evaluation is unremarkable. The next step is:

A. timed intercourse.
B. karyotype of the man.
C. intrauterine insemination with ovulation induction.
D. ICSI with ejaculated sperm.
E. counsel regarding high risk of congenital anomalies.

61. A 65-year-old healthy man with bothersome LUTS (AUA Symptom Score 15) has a non-invasive uroflow as shown. His PVR is 100 mL. Based on these results, the:

A. study is inconclusive due to a low voided volume.
B. patient has bladder outlet obstruction.
C. patient has underactive detrusor.
D. cause of his LUTS cannot be identified.
E. patient should undergo a pressure-flow urodynamic study.



	Value	Dev (Male)
Maximum flow:	9.4 ml/s	-19 %
Average flow:	4.8 ml/s	-34 %
Voiding time:	36.8 h:mm:ss.S	-87 %
Flow time:	34.0 h:mm:ss.S	
Time to max. flow:	9.3 h:mm:ss.S	4 %
Voided volume:	164.5 ml	
Flow at 2 seconds:	3.6 ml/s	
Acceleration:	1.0 ml/s/s	
Pressure at peak flow:	n/a cm H20	
Flow at peak pressure:	n/a ml/s	
Peak Pressure:	n/a cm H20	
Mean Pressure:	n/a cm H20	

62. Hypercoagulability in patients with ESRD secondary to nephrotic syndrome is due to:

A. hypohomocystinenemia.
B. urinary loss of antithrombin III.
C. retention of protein S.
D. retention of protein C.
E. decreased antiphospholipid antibodies.

63. Performance sports drinks may increase urinary:

A. sodium.
B. citrate.
C. calcium.
D. uric acid.
E. oxalate.

64. When using a colon segment instead of ileum for urinary diversion:

A. bowel obstruction is more common.
B. electrolyte abnormalities are more common.
C. it is more difficult to reach the urethral stump for orthotopic reconstruction.
D. an anti-refluxing anastomosis with tunneling is more difficult.
E. nutritional problems are less frequent.

65. A 68-year-old man has a partial penectomy for a 4 cm squamous cell carcinoma with lymphovascular invasion and involvement of the subepithelial connective tissue. Physical exam reveals a 1.5 cm fixed, right inguinal mass. CT scans of the abdomen and pelvis are normal. His pathologic tumor stage (p) and clinical lymph node stage (c) are:

A. pTa cN1.
B. pT1a cN1.
C. pT1b cN2.
D. pT1b cN3.
E. pT2 cN3.

66. A 67-year-old woman has a transvaginal repair of a post-hysterectomy vesicovaginal fistula located above the trigone with communication to the vaginal vault. The best flap to interpose is:

A. peritoneal.
B. omental.
C. Martius.
D. labial myocutaneous.
E. gracilis.

67. A 62-year-old woman is incidentally found to have a 1 cm vaginal extrusion of her polypropylene sling four years after placement. She has been on vaginal estrogen therapy for the past six months for vaginal atrophy. She is sexually active and neither she nor her partner have any complaints related to the mesh. The next step is:

A. observation.
B. discontinue the estrogen.
C. cease sexual activity for six months.
D. reapproximate the vaginal tissue over exposed sling.
E. explantation of entire sling.

68. A 27-year-old woman on omeprazole and oral contraceptives has a macular rash on her forearm and joint pain. Urine dipstick reveals 2+ protein and 3+ blood. Urine microscopy shows 20 RBC/hpf and eosinophils. Serum creatinine is 1.9 mg/dL. Renal ultrasound is normal. The next step is:

A. observation.
B. stop omeprazole.
C. stop oral contraceptives.
D. prednisolone.
E. lisinopril.

69. After traumatic renal injury, the predictors of persistent bleeding are depth of parenchymal injury, presence of arterial blush, and:

A. urinary extravasation.
B. devitalized fragment.
C. thickness of hematoma.
D. location of laceration.
E. mechanism of injury.

70. A 12-year-old girl develops pelvic pain with menarche. Examination reveals a duplicated vagina with an obstructive bulging perineal membrane which is incised with subsequent release of trapped menses from one of the vaginal vaults. Her periods become normal and the pain resolves. The next step is:

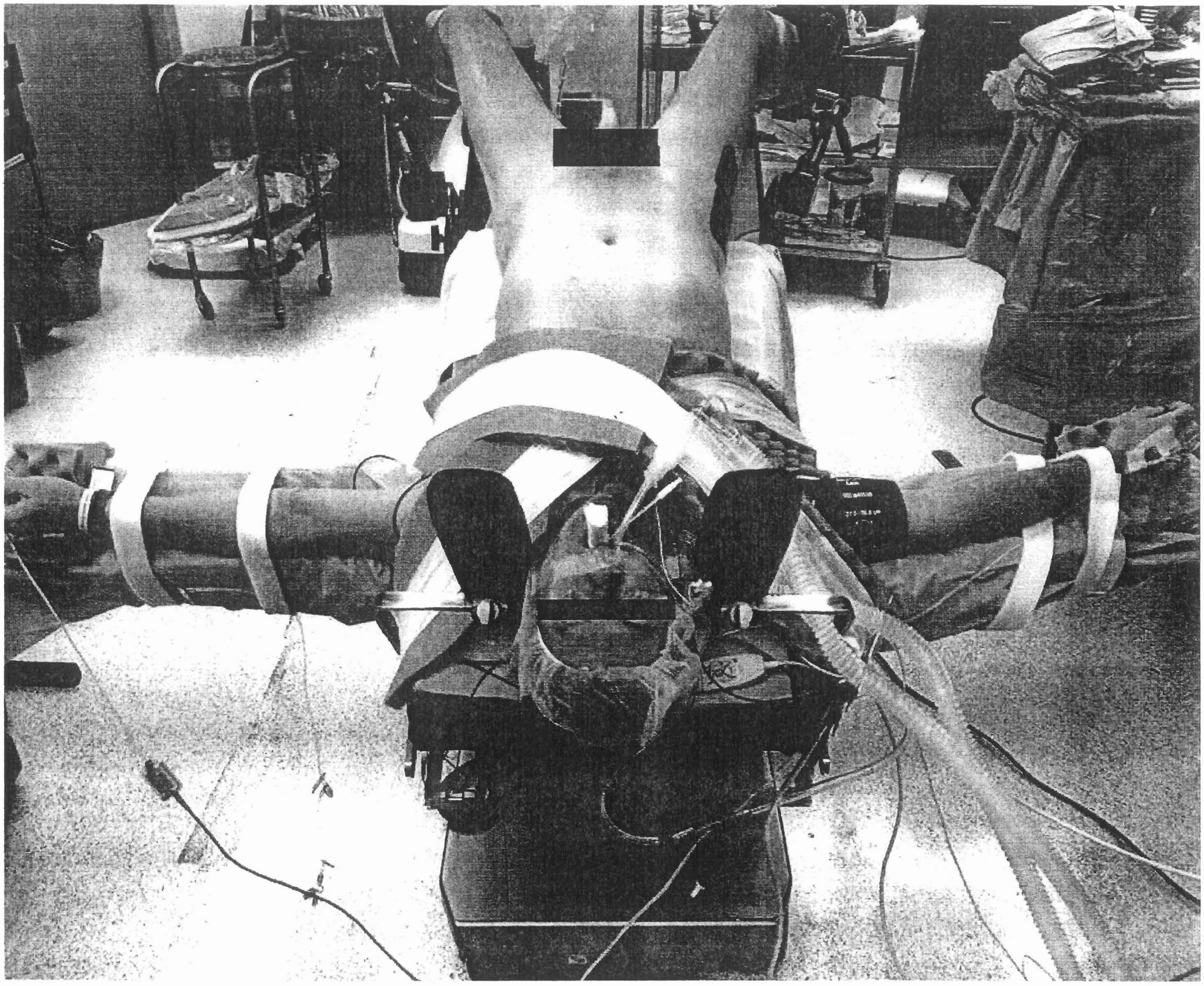
A. observation.
B. renal ultrasound.
C. pelvic MRI scan.
D. VCUG.
E. vaginoscopy.

71. A newborn child has a normal anus, an enlarged phallus with a single opening at its base, labioscrotal fusion, and a palpable left gonad. Karyotype is 46,XX and genitogram demonstrates a low confluence of the urethra and vagina. The most likely diagnosis is:

A. exogenous androgen exposure in utero.
B. mixed gonadal dysgenesis.
C. partial androgen insensitivity.
D. pure gonadal dysgenesis.
E. ovotesticular disorder (true hermaphrodite).

72. A preventable complication associated with the Trendelenburg position pictured is:

- A. weak leg adduction.
- B. weak hip flexion.
- C. pain along the dorsum of the foot.
- D. numbness along the anterior thigh.
- E. weakness in biceps and wrist extensors.



73. In the management of advanced bladder cancer, the substitution of carboplatin for cisplatin in a multi-drug regimen has been shown to:

A. not affect outcome.
B. increase renal toxicity.
C. improve survival.
D. decrease response rate.
E. increase duration of therapy.

74. A 22-year-old woman with a history of nephrolithiasis has left flank pain. She is currently calculus free with a serum creatinine of 1.0 mg/dL. CT urogram demonstrates left hydronephrosis and a 4 cm proximal to mid-ureteral stricture. Diuretic renal scan shows left renal function of 45% and T 1/2 of 23 minutes. The next step is:

A. ureteroscopic incision.
B. ureteroureterostomy.
C. transureteroureterostomy.
D. ureterocalicostomy.
E. ileal ureter.

75. A ten-year-old boy with PUV had an ileocystoplasty and appendicovesicostomy two years ago. He has several 1 cm bladder stones. The next step is:

A. SWL and bladder irrigation.
B. cystolithotripsy through the urethra.
C. cystolithotripsy through the appendicovesicostomy.
D. percutaneous cystolithotripsy.
E. laparoscopic cystolithotomy.

76. A 64-year-old man with urgency, frequency, and decreased force of urinary stream has an AUA Symptom Score of 18. DRE reveals a benign 35 gram prostate. He has a PVR of 150 mL and a negative urinalysis. PSA is 1.5 ng/dL. He will have cataract surgery in two weeks. The next step is:

A. obtain pressure flow urodynamics.
B. tamsulosin.
C. finasteride.
D. tamsulosin in one month.
E. solifenacin.

77. A 68-year-old man has a 5 cm partially exophytic (40%) enhancing renal mass with a R.E.N.A.L. nephrometry score of 12. He has a creatinine of 0.8 mg/dL and a normal appearing contralateral kidney. He has moderate COPD and cardiovascular disease. According to the AUA Guidelines, the next step is:

A. active surveillance.
B. percutaneous radio frequency ablation.
C. percutaneous cryoablation.
D. partial nephrectomy.
E. radical nephrectomy.

78. A 30-year-old man with an incomplete C6 spinal cord injury has obstructive LUTS. Videourodynamics show a maximum flow of 5 mL/second, a sustained detrusor pressure during voiding of 65 cm H_2O and a PVR of 300 mL. During voiding, there is appropriate quieting of his EMG and the bladder neck is closed. The next step is:

A. dantrolene.
B. baclofen.
C. tamsulosin.
D. diazepam.
E. phenoxybenzamine.

79. A ten-year-old girl has a 1.8 cm renal pelvic stone in a horseshoe kidney with moderate hydronephrosis. The next step is:

A. SWL.
B. ureteroscopy and laser lithotripsy.
C. PCNL.
D. laparoscopic pyelolithotomy.
E. open pyelolithotomy.

80. The minimal recommended time to delay elective urologic surgery and discontinue clopidogrel (Plavix®) after placement of a drug-eluting cardiac stent is:

A. three weeks.
B. six weeks.
C. three months.
D. six months.
E. twelve months.

81. During squeezing of the clitoris in a 45-year-old woman with complaints of urinary incontinence, no EMG activity is noted. Coughing demonstrates EMG recruitment. This is most likely representative of a:

A. partial spinal cord disruption at L5-S1.
B. demyelinating lesion.
C. faulty EMG reading.
D. positive bulbocavernosal reflex.
E. normal finding.

82. During prone PCNL of a large volume renal stone, air is injected into the contrast-filled collecting system to delineate the posterior calyces. The patient becomes hemodynamically unstable and hypoxic. The next step is to:

A. remove ureteral catheter.
B. administer hydrocortisone.
C. administer a broad spectrum antibiotic.
D. place patient in supine position.
E. place patient in left lateral decubitus, head-down position.

83. The bacterial organisms most likely to be responsible for the formation of struvite stones are Proteus mirabilis and:

A. Corynebacterium diphtheriae.
B. Escherichia coli.
C. Serratia marcescens.
D. Staphylococcus aureus.
E. Streptococcus pneumoniae.

84. A 41-year-old man has a low velocity gunshot wound to the perineum. Retrograde urethrogram shows extravasation of contrast at the distal bulbar urethra. Cystoscopy reveals an isolated 1 cm defect on the ventral aspect of the distal bulbar urethra. No other injuries are identified. The next step is:

A. urethral catheter realignment.
B. suprapubic tube placement.
C. debridement and primary urethroplasty.
D. debridement and urethroplasty with flap.
E. staged urethroplasty.

85. Radiation exposure to the patient during fluoroscopy can be reduced by:

A. allowing the radiology technician to control the fluoroscopy pedal
B. using continuous imaging over multiple spot images.
C. using boosted images.
D. positioning the radiation source under the operating table.
E. using the last image hold feature.

86. A 47-year-old woman is undergoing percutaneous test stimulation of a lead for sacral neuromodulation. Plantar flexion and rotation of the foot is noted along with sensation in the buttock. The next step is to:

A. maintain lead and discharge home.
B. place the lead one foramen higher and re-test.
C. place the lead one foramen lower and re-test.
D. advance the lead deeper into the foramen and re-test.
E. withdraw the lead to a more superficial location in the foramen and re-test.

87. A 39-year-old man with a BMI of 40 has a 5 mm distal ureteral calculus on non-contrast CT scan. The stone was not visible on KUB. Four weeks after initial diagnosis, he is asymptomatic but has not passed his calculus. The next step is:

A. renal ultrasound.
B. KUB with obliques.
C. low-dose non-contrast CT scan.
D. non-contrast CT scan.
E. ureteroscopy.

88. A five-year-old boy with a history of PUV ablation is incontinent day and night. Renal ultrasound shows normal kidneys bilaterally. VCUG shows a mildly trabeculated bladder without VUR and no urethral obstruction. PVR is 10 mL. Urinalysis is normal. The next step is:

A. timed voiding.
B. overnight bladder drainage.
C. urodynamic study.
D. antimuscarinics.
E. desmopressin.

89. According to the AUA Guidelines, sipuleucel-T should be used in men with castration-resistant prostate cancer who have:

A. non-metastatic disease.
B. asymptomatic or minimally symptomatic metastases.
C. painful bone metastases.
D. received docetaxel chemotherapy.
E. poor performance status.

90. A 55-year-old woman has persistent voiding symptoms 18 months after radical hysterectomy that were not present prior to her procedure. The most likely urodynamic findings will be:

A. normal compliance, detrusor overactivity, and fixed external sphincter tone.
B. decreased compliance, detrusor underactivity, and fixed external sphincter tone.
C. decreased compliance, detrusor overactivity, and normal external sphincter tone.
D. normal compliance, detrusor overactivity, and normal external sphincter tone.
E. decreased compliance, detrusor underactivity, and normal external sphincter tone.

91. During a salvage robotic radical prostatectomy, an inadvertent 1 cm rectal injury is encountered during the apical dissection. The next steps are wound irrigation, broad-spectrum antibiotics, anal dilatation, and primary repair with:

A. TPN.
B. omental interposition.
C. suprapubic bladder drainage.
D. peritoneal interposition.
E. diverting colostomy.

92. A 16-year-old girl has severe calf pain and paraesthesia of her foot in the recovery room following a prolonged surgery in the dorsal lithotomy position. The calf pain is exacerbated with palpation and passive dorsiflexion of her foot. She has good capillary refill and palpable pulses in her foot. The next step is:

A. Doppler ultrasound of leg.
B. EMG of leg.
C. pelvic CT scan.
D. lumbar sacral spinal MRI scan.
E. intracompartmental pressure measurement.

93. A 55-year-old woman with urgency urinary incontinence has tried and failed behavioral modifications and Kegel exercises. Urinalysis and physical examination are negative. The next step is:

A. PVR.
B. mirabegron.
C. urodynamics.
D. cystoscopy.
E. sacral neuromodulation.

94. A new medication for treatment of nocturnal enuresis is studied in 1,000 children. Some subjects have daytime urinary incontinence and some have had UTIs. The correct statistical test for assessing efficacy of the medication is:

A. t-test.
B. Fisher's exact test.
C. analysis of variance (ANOVA).
D. multiple linear regression.
E. Pearson correlation coefficient.

95. A 61-year-old woman with a continent cutaneous diversion develops cirrhosis. She is admitted with elevated transaminases and lethargy. The next step is:

A. I.V. sodium bicarbonate.
B. I.V. hydrocortisone.
C. I.V. calcium gluconate.
D. pouchogram.
E. continuous pouch drainage.

96. A 16-year-old girl with a T3 spinal cord injury develops hypotension and tachycardia during PCNL for a staghorn calculus. Preoperative urine culture was negative and she was given perioperative ampicillin and gentamicin. In addition to fluid resuscitation, the next step is:

A. ensure bladder drainage.
B. stop the operation.
C. place a larger access sheath.
D. transfusion.
E. decrease irrigation flow.

97. An eight-year-old boy with prior ileocystoplasty reports catheterizing six times daily. Ultrasound shows new onset of bilateral moderate hydroureteronephrosis. Videourodynamics demonstrate detrusor pressures of 10 cm H_2O at 300 mL and 40 cm H_2O at 575 mL without VUR or detrusor overactivity. The next step is:

A. increase catheterization frequency.
B. placement of an indwelling catheter.
C. diuretic nuclear renal scan.
D. antimuscarinics.
E. bilateral percutaneous nephrostomy tubes.

98. A 37-year-old man develops an abdominal bruit one week after needle biopsy of his left kidney. Arteriogram demonstrates prompt contrast filling of the left renal vein. Blood pressure and heart rate are normal. The next step is:

A. observation.
B. warfarin.
C. repeat arteriogram in 48 hours.
D. embolization.
E. intravascular stent.

99. A 34-year-old woman has a 3 cm right adrenal mass on ultrasound. Endocrine evaluation is normal. The next step is:

A. repeat ultrasound in six months.
B. CT scan without contrast.
C. CT scan with contrast.
D. gadolinium-enhanced MRI scan.
E. biopsy.

100. A 78-year-old man has a 3 cm solid enhancing mass at the posterior aspect of his right kidney. Biopsy reveals clear cell RCC, grade 3. His creatinine is 2.1 mg/dL. He is treated with percutaneous cryoablation. Imaging one year later demonstrates persistent central enhancement of the tumor bed. The next step is:

A. observation.
B. renal mass biopsy.
C. repeat cryoablation.
D. partial nephrectomy.
E. radical nephrectomy.

101. During a sacral neuromodulation first stage trial under general anesthesia, a 48-year-old man has a foramen needle placed in S3 under fluoroscopic guidance on both the left and right sides without a motor response. The next step is:

A. use bipolar settings.
B. change stimulator pulse width.
C. check for neuromuscular blockade.
D. move lead to S2.
E. abort case.

102. An 18-year-old man has gynecomastia. He is tall, thin with poor muscle development, and has sparse facial hair. Both testicles are small and firm. He most likely has:

A. normal estradiol levels.
B. normal LH levels.
C. increased risk of non-germ cell testicular tumors.
D. normal cognitive skills.
E. absence of Leydig cells on testicular biopsy.

103. Two months after a robotic prostatectomy and lymphadenectomy, a 65-year-old man has progressively increasing urinary frequency. His PVR is 25 mL and his urinalysis shows 0-3 RBC/hpf and leukocytes. He has failed a trial of tolterodine. The next step is to obtain a urine culture and:

A. pelvic floor physiotherapy.
B. imipramine.
C. empiric antibiotics.
D. pelvic CT scan.
E. cystoscopy.

104. A 16-year-old girl with a bladder neck reconstruction, augmentation cystoplasty, and appendicovesicostomy is unable to catheterize for 12 hours. A catheter cannot be passed via urethra or appendicovesicostomy. Ultrasound demonstrates a distended bladder. The next step is:

A. percutaneous aspiration of bladder.
B. cystoscopy via urethra.
C. cystoscopy via appendicovesicostomy under general anesthesia.
D. open suprapubic tube placement.
E. revision of appendicovesicostomy.

105. A 54-year-old man has chemoradiation for a cT2 urothelial carcinoma of the bladder. After two cycles of cisplatin and 40 Gy XRT, he has a mid-treatment TURBT. Pathology reveals high-grade T1 urothelial cancer. The next step is:

A. repeat TURBT.
B. complete planned chemoradiation.
C. change to dose dense M-VAC chemotherapy.
D. induction BCG.
E. radical cystoprostatectomy.

106. Fifteen years after bladder augmentation for a neurogenic bladder, a 53-year-old man develops urinary incontinence that does not improve despite antimuscarinics and more frequent CIC. Urinalysis is negative and renal/bladder ultrasound is normal. The next step is:

A. videourodynamics.
B. cystoscopy.
C. onabotulinumtoxinA injections.
D. male sling.
E. revision of augmentation cystoplasty.

107. Acute bleeding after ligation and division of the renal hilum during left nephrectomy is most commonly from the:

A. posterior renal vein.
B. anterior renal artery.
C. gonadal vein.
D. lumbar vein.
E. adrenal vein.

108. An 80-year-old man with severe coronary artery disease has bothersome nocturia. DRE reveals a large, smooth prostate. Urinalysis is normal and PVR is 140 mL. The next step is:

A. observation.
B. voiding diary.
C. serum PSA.
D. oxybutynin.
E. initiate desmopressin.

109. A 57-year-old woman has persistent urgency urinary incontinence despite antimuscarinic therapy. Her POP-Q exam shows: Aa: 0; Ba: 0; C: -6; Bp: -2; and Ap: -2. Her PVR is 75 mL and urinalysis is negative. The next step is:

A. pessary trial.
B. CIC.
C. sacral neuromodulation.
D. cystocele repair.
E. sacrocolpopexy.

110. A three-month-old boy had an unstented dismembered pyeloplasty. One week later, he has continued low-grade fever and modest drainage from his flank incision. Ultrasound demonstrates a large blood clot in the renal pelvis. The next step is:

A. re-evaluate in one week.
B. renal scan with Lasix.
C. placement of ureteral stent.
D. nephrostomy tube placement.
E. re-exploration and repair anastomotic leak.

111. An 85-year-old afebrile man with a chronic suprapubic tube has > 100,000 CFU/mL of *Candida* on a urine culture. The funguria persists after suprapubic tube change. The next step is:

A. repeat culture in one month.
B. renal ultrasound.
C. fungal blood cultures.
D. oral fluconazole.
E. oral flucytosine.

112. A 65-year-old man has decreased force of stream, hesitancy, and frequent small-volume voids. DRE reveals a 45 gram benign prostate and urinalysis is negative. Serum PSA is 2.5 ng/mL and AUA Symptom Score is 21. Before starting medical therapy, he should have:

A. no additional work-up.
B. cystoscopy.
C. uroflowmetry.
D. PVR.
E. pressure-flow urodynamics.

113. A 70-year-old man with Parkinsonian tremors and a history of a myocardial infarction has a 7 cm penile urethral stricture after TURP. The next step is:

A. daily urethral self-dilation.
B. permanent perineal urethrostomy.
C. augmentation urethroplasty with penile skin flap.
D. augmentation urethroplasty with oral mucosa graft.
E. two-stage urethroplasty.

114. A 62-year-old man recovering from a viral upper respiratory infection has a urinalysis revealing 5-6 RBC/hpf. Two weeks later, he is healthy and repeat urinalysis shows 1-2 RBC/hpf. The next step is:

A. no further testing.
B. repeat urinalysis in one year.
C. serum and urine creatinine.
D. voided urine cytology.
E. cystoscopy and CT urogram.

115. Uric acid stone formers should obtain their dietary protein intake from vegetables and:

A. soy.
B. eggs.
C. fish.
D. chicken.
E. dairy products.

116. A three-year-old boy has a 12 cm solid left renal mass with a normal right kidney. During left nephrectomy, the tumor capsule is ruptured with minimal tumor spillage, but there is a complete resection. Pathology is favorable histology Wilms' tumor with negative lymph nodes. The next step is:

A. XRT.
B. dactinomycin, vincristine, and doxorubicin.
C. dactinomycin, vincristine, and XRT.
D. dactinomycin, vincristine, doxorubicin, and XRT.
E. cyclophosphamide, vincristine, doxorubicin, and etoposide.

117. A 34-year-old man with Crohn's disease has three months of suprapubic pain, urinary frequency, dysuria, and tenesmus. Cystoscopy reveals erythema and small papillary changes at the right trigone. Barium enema is normal. The next step is:

A. placement of urethral catheter.
B. TPN, bowel rest, and antibiotics.
C. CT scan of abdomen and pelvis.
D. colonoscopy.
E. TUR of bladder lesion.

118. PARP inhibitors (poly-adenosine diphosphate [ADP]-ribose polymerase inhibitors) target tumors with defects in the pathway involving:

A. androgen regulated growth.
B. AKT/mTOR.
C. DNA repair.
D. mitotic spindle generation.
E. tyrosine kinase receptor signaling.

119. A potential living donor for renal transplantation should be disqualified by the presence of:

A. BMI of 28.
B. GFR of 90 mL/min/1.73 m^2.
C. schizophrenia.
D. age of 19 years.
E. hypertension controlled by hydrochlorothiazide.

120. The safest Veress needle insertion point for pelvic laparoscopy in a patient with a prior history of midline laparotomy is:

A. supraumbilical.
B. infraumbilical.
C. below the right costal margin in the midclavicular line.
D. below the left costal margin in the midclavicular line.
E. below the costal margin in the midline.

121. In a patient with a newly diagnosed pT2N0M0 squamous cell carcinoma of the penis, the rationale for obtaining an inguinal ultrasound and fine needle aspiration of any suspicious lymph nodes prior to performing a radio-guided dynamic sentinel node dissection is to:

A. decrease the number of false positive dissections.
B. decrease the number of false negative dissections.
C. stage the pelvic lymph nodes.
D. map nodes to be selectively excised at sentinel node dissection.
E. allow a decrease in the amount of radiotracer used at sentinel node dissection.

122. A 59-year-old post-menopausal woman has complaints of bothersome stress urinary incontinence, vaginal bleeding and a vaginal bulge. POP-Q exam shows: Aa: 0; Ba:+2; C:+2; Ap: 0; Bp: 0; D: 0; and TVL: 8 cm. Her urinalysis is negative and PVR is 90 mL. She desires uterine preservation if surgical repair is required. The next step is:

A. dynamic MRI scan.
B. urodynamics.
C. endometrial biopsy.
D. cystocele and rectocele repair with sling.
E. sacrouteropexy and sling.

123. Dyspareunia in post-menopausal women is most commonly due to:

A. estrogen deficiency.
B. pelvic irradiation.
C. uterine leiomyoma.
D. endometriosis.
E. neuroproliferative vestibulodynia.

124. The checkpoint inhibitors nivolumab and atezolizumab:

A. inhibit the G1/S cell cycle transition by interfering with growth factor signal transduction.
B. inhibit spindle construction during cell division.
C. block PD-1 or PD-L1 receptors allowing T-cell activation.
D. stimulate cytokine production enhancing natural killer cell activity.
E. block repair of single strand DNA breaks leading to increased apoptosis.

125. A 16-year-old boy with a superficial palpable extra-testicular mass in the scrotum is undergoing ultrasound evaluation. The highest resolution imaging is obtained using:

A. a linear transducer.
B. a sector transducer.
C. lower frequency.
D. higher gain.
E. pulsed wave Doppler.

126. Obtaining sex hormone binding globulin (SHBG) levels is helpful in the evaluation of hypogonadism associated with:

A. hepatic cirrhosis.
B. ischemic priapism.
C. Peyronie's disease.
D. stuttering priapism.
E. non-ischemic priapism.

127. Following an altercation, a 25-year-old man with a history of cocaine abuse complains of severe penile pain and a rigid erection for the past six hours. Physical examination is notable for rigid corpora cavernosa and relatively soft glans and corpus spongiosum. A corporal blood gas reveals a PO_2 of 25 mm Hg, PCO_2 70 mm HG, and pH 7.15, with crankcase oil appearance. The next step is:

A. oral terbutaline.
B. oral phenylephrine.
C. penile color duplex Doppler ultrasound.
D. corporal injection or irrigation with alpha-adrenergic agents.
E. needle aspiration of the corpora.

128. A 35-year-old healthy man will initiate efforts for conception with his 30-year-old healthy wife next month. He arranged for his own semen analysis that revealed normal results except for 1% normal sperm morphology by strict criteria. Their next step is:

A. to attempt to conceive by natural means.
B. intrauterine insemination.
C. in vitro fertilization.
D. in vitro fertilization with ICSI.
E. donor sperm.

129. In comparison to two-piece inflatable penile prostheses, the three-piece inflatable implant:

A. inflates with fewer squeezes of the pump.
B. allows for a smaller incision of the tunica albuginea.
C. is less flaccid when deflated.
D. does not require a separate reservoir.
E. results in an erection with a less natural feel.

130. A 32-year-old man, who previously required left orchiectomy due to torsion as a child, has a right radical orchiectomy for a pT2 pure seminoma. Two weeks after orchiectomy, his previously normal beta-hCG is elevated. Serum AFP, as well as CT scans of chest, abdomen, and pelvis, are normal. The next step is:

A. PET scan.
B. exogenous testosterone and repeat markers.
C. etoposide-cisplatin chemotherapy.
D. retroperitoneal XRT.
E. RPLND.

131. A 27-year-old man with a mutation of SLC7A9 and a proximal tubule transporter has recurrent kidney stones despite increased fluids and potassium citrate. The next step is:

A. pyridoxine.
B. thiazide diuretic.
C. xanthine oxidase inhibitor.
D. alpha-mercaptoproprionylglycine.
E. acetohydroxamic acid.

132. A 61-year-old man with no prior history of bladder cancer has a right laparoscopic nephroureterectomy for a 3 cm renal pelvis tumor. No lymph nodes are removed during surgery. Pathology shows an invasive high-grade urothelial carcinoma involving the lamina propria. The bladder cuff margin is negative for tumor. His postoperative estimated GFR is 63 mL/min/1.73 m^2. The next step is:

A. intravesical mitomycin C.
B. intravesical BCG.
C. cisplatin-based adjuvant chemotherapy.
D. retroperitoneal XRT.
E. RPLND.

133. A 62-year-old man is catheterized for acute urinary retention due to BPH, and one liter of urine is initially drained. He is alert and oriented, but continues to have urine output of more than 200 mL/hr. The next step is:

A. free access to oral fluids.
B. oral COX-2 inhibitor.
C. 0.9% normal saline I.V. at 300 mL/hr.
D. lactated Ringer I.V. at 200 mL/hr.
E. 0.45% normal saline I.V. at 300 mL/hr.

134. A 55-year-old man with erectile dysfunction and a 50-degree left lateral curvature due to Peyronie's disease is undergoing penile prosthesis surgery. Cylinder filling reveals a residual 35-degree curvature after tunical closure. The next step is:

A. upsize penile implant.
B. remove the cylinders and switch to a semi-rigid device.
C. clamp the tubing and perform penile modeling.
D. remove the cylinders and perform plaque excision/grafting procedure.
E. remove urethral catheter and reassess curvature after refilling the cylinders.

135. Paternity potential in males with spina bifida correlates positively with:

A. serum testosterone level.
B. sacral neurologic level of lesion.
C. reflexogenic erections.
D. shunt-dependent hydrocephalus.
E. glans penis sensation.

136. Five years after prostatectomy for prostate cancer, a 63-year-old man has a rising PSA despite castrate levels of testosterone on LH-RH agonist therapy. His PSA doubling time is six months. The remaining metastatic evaluation is negative. The next step is:

A. switch to LH-RH antagonist.
B. bicalutamide.
C. ketoconazole.
D. apalutamide.
E. sipuleucel-T.

137. A 63-year-old man has persistent urinary retention and fails a voiding trial four days after artificial urinary sphincter implantation. The 4 cm cuff is confirmed to be deactivated. The next step is:

A. CIC.
B. replace 10 Fr urethral catheter.
C. suprapubic tube.
D. cystoscopy.
E. surgical revision.

138. A 64-year-old morbidly obese man has an uneventful placement of a three-piece inflatable penile prosthesis. In order to minimize future device autoinflation, the most effective perioperative strategy is:

A. aggressive weight loss.
B. avoid intercourse for three months.
C. keep implant completely deflated.
D. ectopic/submuscular reservoir placement.
E. daily device inflation.

139. A 75-year-old woman has bothersome nocturia four times a night despite evening fluid restriction. Examination shows vaginal atrophy, loss of urine with cough, and PVR of 90 mL. The next step is initiation of desmopressin acetate nasal spray (Noctiva™) and:

A. check serum sodium in one week.
B. check serum sodium in one and four weeks.
C. night time CIC.
D. bulking agent.
E. mid-urethral sling.

140. Compared to sacral nerve stimulation outcomes after two years, women having intravesical onabotulinumtoxinA injections report significantly greater:

A. treatment satisfaction.
B. complete resolution of urgency urinary incontinence.
C. reduction in urgency urinary incontinence episodes.
D. reduction in urinary frequency.
E. incidence of adverse events.

141. The risk of incisional hernia following robotic radical prostatectomy may be reduced by:

A. fascial closure of non-bladed trocar incisions larger than 5 mm.
B. use of a supraumbilical extraction site.
C. using a transverse midline fascial incision for extraction.
D. minimize extraction site size by squeezing around the specimen bag.
E. using a running fascial closure.

142. A 50-year-old man has a large right renal mass with tumor thrombus extending into the atrium. Under hypothermia and circulatory arrest, he has a nephrectomy with removal of the tumor thrombus. The most frequent significant complication is:

A. hepatic dysfunction.
B. pulmonary air embolus.
C. central nervous system deficit.
D. coagulopathy and hemorrhage.
E. tumor emboli.

143. The following reduces discomfort for male patients during flexible cystoscopy:

A. use of lidocaine gel.
B. use of lidocaine cream.
C. allowing men to watch their procedure on a monitor.
D. minimizing hydrostatic pressure during scope passage.
E. performing the procedure with minimal ambient light or sound.

144. According to the AUA Guideline on the evaluation and management of testosterone deficiency, conclusive evidence exists that testosterone therapy for hypogonadal men results in a greater risk of developing:

A. stroke.
B. myocardial infarction.
C. venothrombolic events.
D. fertility impairment.
E. prostate cancer.

145. Two weeks after implantation of an inflatable penile prosthesis, a 62-year-old man has persistent penoscrotal pain and moderate scrotal swelling that has not subsided since surgery. He is afebrile with a WBC count of 7000/cu mm. The wound is clean without discharge or erythema. The next step is:

A. observation.
B. antibiotics.
C. scrotal ultrasound.
D. drainage of hematoma.
E. salvage procedure.

146. A 67-year-old man has a 2 cm itchy red patch on the lateral aspect of his scrotum. Biopsy shows intra-epithelial adenocarcinoma (extramammary Paget's disease). An evaluation for metastatic disease or other primary site is negative. The next step is:

A. local excision of visible lesion.
B. wide local excision.
C. CO_2 laser ablation.
D. 5-fluorouracil cream.
E. imiquimod cream.

147. An 80 kg man with a creatinine of 2.3 mg/dL and an estimated GFR of 25 mL/min/1.73 m^2 is scheduled to have an open radical cystoprostatectomy and ileal conduit urinary diversion. Thromboembolic prophylaxis during his hospitalization should include intermittent pneumatic compression stockings and:

A. early ambulation.
B. 5000 IU of unfractionated heparin every 12 hours starting prior to induction of anesthesia until discharge.
C. 5000 IU of unfractionated heparin every 12 hours starting on postoperative day one until ambulatory.
D. 40 mg of enoxaparin every 12 hours starting on postoperative day one until ambulatory.
E. 40 mg of enoxaparin every 24 hours starting prior to induction of anesthesia until discharge.

148. A 63-year-old man has a PSA of 15.3 ng/mL, and TRUS prostate dimensions are 6 x 7 x 7 cm. His PSA density is:

A. 0.8 ng/mL/cc.
B. 0.1 ng/mL/cc.
C. 0.15 ng/mL/cc.
D. 0.2 ng/mL/cc.
E. 0.25 ng/mL/cc.

149. The preoperative intervention most likely to decrease hospital length of stay after urinary diversion is:

A. low carbohydrate diet.
B. mechanical bowel preparation.
C. antibiotic bowel preparation.
D. μ-opioid antagonist.
E. epidural placement.

150. A 51-year-old woman has urinary retention 12 hours after a bulking agent injection. The next step is:

A. tamsulosin.
B. in and out catheterization.
C. indwelling urethral catheter.
D. suprapubic tube.
E. transurethral resection of bulking agent.

American Urological Association Education and Research, Inc.
Office of Education

2019 Self-Assessment Study Program

Part II - Study Booklet
Comments, References, and Answers

EXPLANATION TO PARTICIPANTS

SELF-ASSESSMENT STUDY PROGRAM

INTRODUCTION

This study booklet provides a valuable study program and should prove to be the most significant part of the Self-Assessment Study Program for you. You are urged to set aside time on several different occasions to analyze your reasoning processes as compared to those of the Examination Committee. To properly complete this part of the learning experience, it is estimated that you will need to spend approximately 20 hours reading references and related materials.

It is important that you carefully read the comments to understand why the answer is deemed to be the "best answer." You may have selected the correct answer but your logic in selecting it may differ from that of the Examination Committee. It is also very important to obtain and read the references given so that you may gain the maximum benefit of this Self-Assessment Study Program. We recommend that you do this reading even if you selected the correct answer to the question.

In closing, we recommend that you save and file all of your Self-Assessment Study Program materials. They will assist you in comparing your progress when reviewing the next SASP, and will remain valuable resource information for your practice.

SCORING

Your results are based on the total number of points you scored out of the possible 750 for the entire examination; 5 points for each correct answer.

In the Comments and References Section, the response which is deemed to be the correct answer is provided.

EXPLANATION OF PARTICIPANT PROFILE

Identification Information: Please check to be sure this corresponds with the information you filled in on your answer sheet so you can verify that you have received the appropriate report.

Type of Question: Each question is assigned to two categories for analysis and reporting. They are: 1) Problem Area and 2) Patient Type.

1) **Problem Area:** Each question is assigned to one of eleven Problem Areas.

a. Calculous Disease
b. Congenital Anomalies, Embryology, Anatomy
c. Core Competencies, Geriatrics, Radiation Safety and Ultrasound
d. Fluid & Electrolyte, Transplant, Hypertension, Vascular Disease, Nephrology
e. Infection & Inflammatory Disease
f. Neoplasm
g. Neurogenic Bladder, Voiding Dysfunction, Incontinence
h. Obstructive Uropathy, Laparoscopy, Robotic Surgery
i. Physiology, Immunology, Adrenal
j. Sexual Dysfunction, Endocrinopathy, Fertility Problems
k. Trauma, Fistulae
l. Urinary Diversion

2) **Patient Type:**

a. Adult
b. General
c. Pediatric

Number of Items: Indicates the number of examination items (questions) that were classified in each content area.

Participant Average: Indicates the percent score earned by the participant when his performance on the items was tabulated. The percent score on the total examination is also indicated at the bottom.

All data concerning performance on the Self-Assessment Study Program is processed in a secure section of the Office of Education, and the results are confidential.

EXPLANATION OF THE PEER GROUP ANALYSIS

This report indicates the performance of the participant's peer group and offers the opportunity for comparing the peer group performance to the average of all participants who completed the examination. The Peer Group is identified at the top of the report. Be sure it is accurate for you. Years since completion of residency training determined into which peer group you were categorized.

1 - 5 years	16 - 25 years
6 - 10 years	26 - 35 years
11 - 15 years	Over 35 years

0 years - Resident

Type of Question: Lists the content categories into which items were classified.

Percent Averages: Peer Group percentage is the average score for your Peer Group in each content area and on the total examination. All Groups is the average score of all examination participants in each content area and on the total examination.

Total Examination: Total average when all items of the examination are calculated.

Number of Participants in Peer Group: Number of participants in your peer group used to compute your percentile ranking which is located on the bottom of your Participant Profile.

IMPORTANT!!! CME Credit Expiration Dates

For Physicians

Products include SASP Booklets, Online, and *Qstream*

Any 2019 SASP	December 31, 2021
Any 2018 SASP	December 31, 2020
Any 2017 SASP	December 31, 2019

Please note: CME Credits expire after three years of Original Release Date.

Question #1 **ANSWER=B**

Leakage and fistula formation from a urinary diversion occur in 2 to 9% of patients; however, 20 to 60% of these fistulae close spontaneously. Conservative management can be safely attempted assuming the patient is not septic and that adequate drainage is maintained. Leakage could be from the ureteroileal anastomosis or from the butt end of the conduit. Bilateral ureteral stents are already in place, which should address any concerns about a ureteroileal anastomotic leak. Therefore, the best initial therapeutic maneuver in this patient is placement of a catheter into the ileal loop to facilitate drainage. While TPN is important in malnourished patients and should also be initiated, this would not address the immediate issue of the leak. If the stomal catheter failed to decrease the fistulous output, bilateral percutaneous nephrostomy tubes could be placed to divert the urinary stream. If this failed, surgical intervention would be required to address the problem.

Skinner EC, Daneshmand S: Orthotopic urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 99, p 2361.

Question #2 **ANSWER=A**

Femoral neuropathy can occur after lithotomy procedures due to hip hyperabduction, or secondary to retractor injury with abdominal/pelvic procedures. The femoral nerve, the largest branch of the lumbar plexus, is formed within the psoas muscle from the fusion of the anterior divisions of L2-L4. It emerges between the psoas major and iliacus muscles just superior to the inguinal ligament and enters the thigh lateral to the external iliac artery. Sensory branches are the anterior and medial femoral cutaneous and long saphenous nerves. Motor supply is to the psoas, iliacus, quadriceps, pectineus, and sartorius muscles. The obturator nerve is a predominantly motor nerve providing adduction of the obturator internus muscle and also originates between L2-L4 nerve roots. The genitofemoral nerve has a genital branch providing motor supply to cremaster muscle and sensation to the anterior scrotum, and the femoral branch provides sensation to the anterior thigh. The sciatic nerve, derived from nerve roots L4-S3 exits the sciatic foramen and provides sensory and motor innervation to the back of the thigh, leg, and foot. The ilioinguinal nerve is a branch of L1 and provides sensory innervation to the upper scrotum and base of the penis (males) or mons pubis and labia majora (females) and motor innervation to the internal oblique and transversus muscles.

Chung BI, Sommer G, Brooks JD: Surgical, radiographic, and endoscopic anatomy of the male pelvis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 68, pp 1621-1623.

Question #3 **ANSWER=D**

Given the size of a 5 cm adrenal mass and a history of lung cancer, observation alone is not acceptable. The CT findings are not consistent with an adenoma (Hounsfield units < 10), and as such, further evaluation is indicated. The primary utility of adrenal mass biopsy is to differentiate the presence of metastatic disease, especially in patients with a separate primary malignancy. In such cases, treatment options might depend on the pathology of the lesion, and, therefore, biopsy would be indicated. Importantly, a metabolic evaluation should be performed prior to biopsy, specifically to establish the absence of catecholamine production, which may be triggered by biopsy. When MRI is used in the evaluation of an adrenal lesion, opposed phase chemical-shift MR imaging is employed to evaluate for intracellular lipid content and help distinguish an adenoma from other adrenal lesions. Nevertheless, MRI would not be reliably able to differentiate between adrenocortical carcinoma, which must be considered given the size of the lesion, and an adrenal metastasis, given the patient's history of lung cancer. Likewise, PET scan would not be able to distinguish between a metastasis and primary adrenocortical carcinoma and so would not be helpful at this point (though it could play a role if metastasis was established). MIBG is an analog of norepinephrine, and as such, MIBG scanning has been used in the evaluation of pheochromocytoma. In a patient with normal metabolic parameters, this scan would be unlikely to impact management, and, therefore, not recommended. To proceed immediately to an adrenalectomy in this setting of a previous primary malignancy, such as lung cancer, is inappropriate until tissue diagnosis is obtained as treatment options may depend upon pathology of the lesion.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, pp 1562-1563; 1567-1571.

Question #4 **ANSWER=D**

Autosomal dominant polycystic kidney disease is a systemic disease with varied renal pathology, including renal cysts, calculi, infection, hemorrhage, and eventual renal insufficiency. Associated gastrointestinal pathology includes hepatic and pancreatic cysts. These patients also have an increased incidence of cerebral artery aneurysms. The cysts eventually become isolated structures and standard empiric antibiotics for pyelonephritis penetrate cysts poorly. Lipid soluble antibiotics are required and include trimethoprim, tetracycline, doxycycline, ciprofloxacin, levofloxacin, and chloramphenicol. Ampicillin, aminoglycosides, cephalosporins, and nitrofurantoin are not lipid soluble and thus are poor choices.

Pope JC IV: Renal dysgenesis and cystic disease of the kidney, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 131, p 3021.

Question #5 **ANSWER=B**

It is not uncommon to develop pouchitis after construction of a continent urinary reservoir. This is especially true in the early postoperative period when mucous accumulation can be high. A simple program of mechanical irrigation can decrease the incidence of infections, though asymptomatic colonization may not decrease. Using a larger catheter may help urine drainage, but usually does not drain all the mucous. Prophylactic antibiotics or urine acidification are useful in patients who do not respond to simple measures and remain persistently infected. A pouchogram is not the initial step in evaluation of recurrent UTIs in the early postoperative period after continent diversion.

DeCastro GJ, McKiernan JM, Benson MC: Cutaneous continent urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 98, p 2324.

Pearce SM, Daneshmand S: Continent cutaneous diversion. UROL CLIN N AM 2018;45:55-65.

Question #6 **ANSWER=A**

The image demonstrates a subcapsular hematoma. While subcapsular hematoma can occur in the absence of renal malignancy, the clinician should always be suspicious of an underlying tumor as a cause for the bleeding. In those cases in which an underlying tumor is not evident, delayed imaging is advised as it can allow evaluation for tumor after the hematoma is reabsorbed. A ureteral stent or percutaneous nephrostomy tube is not indicated given the absence of hydronephrosis on the image. Open or percutaneous drainage is not indicated given the risk of underlying tumor and the high likelihood of worsening the bleeding. There is insufficient evidence of a clear tumor to warrant either renal biopsy nor radical nephrectomy until a discernible mass is evident.

Campbell SC, Lane BR: Malignant renal tumors, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 57, pp 1314-1320.

Question #7 **ANSWER=D**

Pyocystis occurs in approximately 20% of patients who undergo supravesical diversion. Patients typically have a malodorous discharge and may develop sepsis. If conservative measures, such as routine bladder irrigations fail, vaginal vesicostomy (creation of a large vesico-vaginal fistula), is an effective method of preventing pyocystis in women. This is an especially good alternative for an elderly or high risk patient. A stapling device can be used to quickly perform this operation. Absorbable staples should be used if the patient is sexually active. Prophylactic oral antibiotics will not be effective in preventing pyocystis in a defunctionalized bladder. Intravesical silver nitrate will not prevent bladder secretions and is likely to be no more effective than routine bladder irrigations. A suprapubic tube will not facilitate bladder drainage, as well as a vaginal vesicostomy, and would be prone to infectious complications in a defunctionalized bladder. Cystectomy is an effective treatment for pyocystis and would likely be required if the patient was a male or if there was evidence of tumor on the cystoscopy. However, the morbidity of this procedure in this elderly patient is high.

Lawrence A, Hu B, Lee O, et al: Pyocystis after urinary diversion for incontinence: Is a concomitant cystectomy necessary? UROL 2013;82:1161-1165.

Doherty AP, Bellringer J: Stapled vaginal vesicostomy for pyocystis in the defunctioned female bladder. BJU INTERN 1999;83:339-340.

Question #8 ANSWER=D

Formaldehyde is a 37% solution of formaldehyde gas dissolved in water and should not be used intravesically. Formalin solution is made up of 1-10% formaldehyde diluted with normal saline and has been given in bladder instillations to control hemorrhage from advanced bladder tumors or radiation cystitis. Formalin solution is exceedingly irritating to the bladder, and thus, requires general or regional anesthesia. Because a 10% formalin solution may cause fibrosis and obstruction of the ureteral orifices, formalin instillation should begin with a 1% solution and be repeated with a 5% and then a 10% solution, if necessary. Many begin with a 1-2% solution if other measures (i.e., silver nitrate and 1% alum) have failed. A cystogram should be performed before instillation to rule-out vesicoureteral reflux. If reflux is present, Fogarty catheters should be passed up both ureters, and the patient should be tilted into the head-up position to protect the upper tracts from the toxic effects of formalin. Selective internal iliac arterial embolization is more invasive and should be reserved for patients that fail formalin instillation. Ileal loop urinary diversion is the final option for patients with intractable hemorrhage and a nonfunctional bladder.

Boorjian SA, Raman JD, Barocas DA: Evaluation and management of hematuria, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 9, p 189.

Smit SG, Heyns CF: Management of radiation cystitis. NAT REV UROL 2010;7:206-214.

Ziegelmann MJ, Boorjian SA, Joyce DD, et al: Intravesical formalin for hemorrhagic cystitis: A contemporary cohort. CAN UROL ASSOC J 2017;11(3-4):E79–E82.

Question #9 ANSWER=D

The differential diagnosis of low ejaculate volume azoospermia is ejaculatory duct obstruction, hypogonadism, vasal agenesis, ejaculatory failure, and testicular failure. Hypogonadism was excluded by a normal testosterone level and the patient has palpable vasa. Retrograde ejaculation is not present as sperm were not found in the post-ejaculate urine. This patient has either testicular failure or an obstruction of the ejaculatory ducts. Seminal vesicle aspiration under TRUS guidance will reveal numerous sperm if obstruction is present and is the least invasive method to diagnose this treatable lesion. While vasography would reveal a distal obstruction, it is more invasive than TRUS. Ejaculatory duct cannulation is difficult and, thus may not diagnose the problem. Finally, renal ultrasound is indicated in the work-up of patients with congenital unilateral or bilateral absence of the vas deferens, which this patient does not have based on his examination.

Niederberger CS: Male infertility, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 24, pp 564, 567, 572.

Jarow J, Sigman M, Kolettis PN, et al: The optimal evaluation of the infertile male: AUA BEST PRACTICE STATEMENT. Updated May 2017.
http://www.auanet.org/documents//education/clinical-guidance/Male-Infertility-d.pdf

Question #10 **ANSWER=E**

Preoperative alpha-blockade is recommended for patients with pheochromocytoma in an attempt to stabilize the patient's hemodynamic status and expand their intravascular volume. Beta-blockers can also be used preoperatively to decrease the risk of arrhythmias. When the blood supply of the tumor has been curtailed, a fall in circulatory catecholamine levels may result in hypotension. Volume replacement with saline is the initial treatment of choice, with careful cardiovascular monitoring. In the absence of bleeding, transfusion is not indicated. Vasopressors are rarely required and may be discontinued once vascular volume approaches normal.

Lim SK, Rha KH: Surgery of the adrenal glands, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 66, p 1580.

Question #11 **ANSWER=D**

The primary toxicity of bleomycin is pulmonary fibrosis and it has only mild myelosuppressive effects at high doses. All of the other agents listed can have significant bone marrow toxicity. Although cisplatin is most commonly associated with renal toxicity, it can have myelosuppressive side effects as well.

Copur MS, Rose M, Gettinger SN: Miscellaneous chemotherapeutic agents, in Devita VT, Hellman LJ, Rosenberg SA (eds): CANCER: PRINCIPLES AND PRACTICE OF ONCOLOGY, ed 9. Philadelphia, Lippincott, Williams, and Wilkins, 2011, pp 456-457.

Kaufman RM, Anderson KC: Hematologic complications and blood bank support, in Bast RC, Croce CM, Hait WN, et al (eds): HOLLAND-FREI CANCER MEDICINE, ed 9. Hoboken, John Wiley & Sons, 2017, p 1738.

Question #12 ANSWER=C

The main arterial supply of the sigmoid colon is from the sigmoid and superior hemorrhoidal branches of the inferior mesenteric artery (IMA). The major collateral vessels are the middle and inferior hemorrhoidal arteries which arise from the internal iliac artery. They anastomose freely with the superior hemorrhoidal branches. It is distributed to the rectum, anastomosing with the inferior vesical artery, superior rectal artery, and inferior rectal artery. The right colic artery arises from the superior mesenteric artery and does not have collaterals to the distal colon. The superior hemorrhoidal arteries and sigmoid arteries are continuations of the IMA and are filled retrograde when the IMA is ligated. The middle sacral artery arises from the posterior aspect of the aorta and gives some blood supply to the rectum.

Dahl DM: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 97, pp 2281-2282.

Question #13 ANSWER=A

This patient has an imperforate hymen causing obstruction of the vagina. The cervical glands produce mucous in response to maternal hormones. The presentation is that of an interlabial mass. Catheterization of the bladder does not decompress the mass. Ultrasound will confirm the cystic nature of the lesion and its location excludes sacrococcygeal teratoma. Rhabdomyosarcoma would be uncommon in this age group and would be solid. Ureterocele can present as an interlabial mass, but the ureterocele is intravesical rather than between the bladder and the rectum. Gartner's duct cysts usually are found in the wall of the vagina. They can occur with renal anomalies (ectopic ureter or renal hypoplasia), but rarely present with symptoms of abdominal and/or vaginal mass.

Kaefer M: Management of abnormalities of the genitalia in girls, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 149, p 3459.

Question #14 ANSWER=D

MRI scan is unable to reliably identify urinary calculi since it does not visualize calcium. Therefore, stones are noted as filling defects overlying the high signal intensity of urine on a T2-weighted image. Stones are not visualized on T1-weighted images. Low core intensity and bright bone-like signal images are not standard findings or terminology for stone disease on MRI scans.

Matlaga BR, Krambeck AE, Lingeman JE: Surgical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 54, p 1288.

Question #15 **ANSWER=A**

This infant has stage 4-S neuroblastoma. This can include involvement of skin, liver, and bone marrow without bone metastases on skeletal survey. Observation therapy alone in children less than one year of age is usually sufficient and metastases regress spontaneously, and therefore, do not require any of the other options at this time. In older children, or in cases where metastases do not regress, chemotherapy is used. In this patient, there is no role for XRT or adrenalectomy.

Ritchey ML, Shamberger RC: Pediatric urologic oncology: Renal and adrenal, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 155, pp 3562-3566.

Question #16 **ANSWER=D**

Carbapenems and cephalosporins are immunogenically similar in their ability to effect hypersensitivity reactions in patients who are allergic to penicillin. However, cephalosporins can usually be safely administered to patients with mild allergic reactions to penicillin. Ampicillin is immunogenically very similar to penicillin. These reactions are not seen in patients given aztreonam, although allergic cross-reactivity can occur due to reactivity to its side chain component, which is unrelated to penicillin hypersensitivity.

Schaeffer AJ, Matulewicz RS, Klumpp DJ: Infections of the urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 12, pp 256-257.

Orenstein R, Wong ES: Complications of antimicrobial use in the urological patient. AUA UPDATE SERIES 1995, vol 14, lesson 31.

Question #17 **ANSWER=C**

The patient has evidence of locally advanced (cT4) and N1 prostate cancer based on evidence of bladder invasion and a right lymph node on the MRI scan. However, he does not appear to have metastatic disease (M0). Axumin PET is FDA approved for evaluation of recurrence after treatment and would not be indicated for staging at the time of diagnosis. Although some studies may suggest that the combination of androgen deprivation therapy (ADT) and chemotherapy is beneficial in N1M0 patients, the evidence currently only supports the benefit of ADT and docetaxel in metastatic, hormone-sensitive prostate cancer. The best treatment would be XRT combined with long-term ADT (2-3 years). Even with the significant potential for disease recurrence, treatment of the primary tumor within the prostate may reduce local complications; however, neither radical prostatectomy nor cystoprostatectomy would be indicated.

https://www.nccn.org/professionals/physician_gls/pdf/prostate.pdf

Meng MV, Carroll PR: Treatment of locally advanced prostate cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 118, p 2763.

Question #18 ANSWER=A

Sexual abuse in children will often leave no physical findings. All of the choices are findings consistent with sexual abuse, but a normal examination is the usual finding. Consequently, one cannot rule-out sexual abuse on the basis of the physical examination alone. A complete history, knowledge of associated risk factors, and a thorough physical examination, combined with a high index of suspicion, may lead to the diagnosis.

Hinds A, Baskin LS: Child sexual abuse: What the urologist needs to know. J UROL 1999;162:516-523.

Kolon TF, Canning DA: Urologic evaluation of the child, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 125, p 2896.

Question #19 ANSWER=B

Calcium phosphate stones can be classified as brushite (pH 6.6). Recurrent calcium phosphate (100%) brushite stones are unusual and should arouse suspicion for primary hyperparathyroidism (resorptive hypercalciuria). Serum parathyroid and calcium levels should be evaluated. Hyperuricosuric calcium nephrolithiasis is most commonly due to excessive purine intake and can be successfully treated with dietary manipulation. Excess meat consumption is associated with hyperuricosuria. Excessive uric acid production from catabolic states or other metabolic factors can be successfully treated with allopurinol or potassium citrate. Phosphate renal leak hypercalciuria is associated with elevated Vitamin D levels and calcium oxalate or mixed calcium oxalate and calcium phosphate calculi. Renal hypercalciuria is associated with calcium oxalate stones and is successfully treated with hydrochlorothiazides over the long-term.

Lipkin ME, Ferrandino MN, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 52, pp 1207-1208.

Question #20 ANSWER=B

Hydronephrosis occurs in 5% of ureters at risk following reconstructive vascular surgery. The cause of ureteral obstruction is anterior graft placement (30%) and localized retroperitoneal fibrosis (70%). Grafts should be placed posterior to the ureter, as in this case. Early ureteral obstruction due to secondary retroperitoneal fibrosis occurring within six months of surgery can resolve with a four-week course of oral steroid therapy. Percutaneous nephrostomy is not indicated with only mild flank pain and a normal serum creatinine. Transureteroureterostomy should be reserved for major loss of ureteral length and nephrectomy is not indicated. Ureterolysis would be reserved for failure of more conservative measures.

Cangiano TG, deKernion JB: Urologic complications of vascular surgery. AUA UPDATE SERIES 1998, vol 17, lesson 39, p 306.

Huben RP, Schellhammer PF: Steroid therapy for ureteral obstruction after aortoiliac graft surgery. J UROL 1981;125:881-883.

Nakada SY, Best SL: Management of Upper Urinary Tract Obstruction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, e 11. Philadelphia, Elsevier, 2015, vol 2, chap 49, p 1145.

Question #21 ANSWER=A

The rate of bladder filling (mL/min) is calculated by determining the child's predicted bladder capacity [average bladder capacity in mL = (age in years + 2) X 30] and dividing the result by 10. In this case, (3+2) X 30 = 150/10 = 15 mL/min or less. It is important not to fill the bladder too rapidly as it may result in falsely low levels of detrusor compliance and may produce artifactual detrusor contractions. Filling at 10% of the calculated bladder capacity (or less) per minute will minimize these problems.

Adams MC, Joseph DB, Thomas JC: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 145, p 3332.

Question #22 ANSWER=B

After bilateral adrenalectomy, reports have noted that between 8-29% of patients develop Nelson's syndrome, a condition of increased ACTH secretion due to pituitary adenoma growth. While the pathophysiology remains in some debate, a lack of negative feedback from cortisol after bilateral adrenalectomy and subsequent increase in CRH (corticotropin releasing hormone) production has been hypothesized to be responsible. Local symptoms from tumor growth include headaches and visual field changes, while hyperpigmentation accompanies the increased ACTH levels. Diagnosis can be established with an MRI scan of the brain, measurement of elevated ACTH levels, as well as clinical manifestations. Treatments include radiation (either prophylactic or therapeutic), surgery (transsphenoidal), or pharmacotherapy (octreotide, temozolomide, pasireotide). Prophylactic radiation at the time of bilateral adrenalectomy may prevent the development of Nelson's syndrome, but its routine use remains controversial. The ACTH overproduction is not ectopic, but from the pituitary. Likewise, the clinical symptom complex in this setting is not likely to result from either excessive or inadequate hormone replacement. Indeed, excessive cortisone replacement would result in a Cushingoid appearance (purple striae, buffalo hump, central obesity).

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, p 1539.

Reincke M, Ritzel K, Osswald A, et al: A critical reappraisal of bilateral adrenalectomy for ACTH-dependent Cushing's syndrome. EUR J ENDOCRINOL 2015;173:M23-32.

Barber TM, Adams E, Ansorge O, et al: Nelson's syndrome. EUR J ENDOCRINOL 2010;163:495-507.

Question #23 **ANSWER=C**

Urethral carcinoma is more common in women, and may involve either the distal or proximal urethra. The location of the primary tumor will dictate the primary landing zone for lymphatic spread. The distal urethra and labia drain to the superficial and then deep inguinal nodes, while the proximal urethra drains primarily to the external iliac and then secondarily to the hypogastric and obturator lymph nodes.

Sharp DS, Angermeier KW: Tumors of the urethra, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 38, pp 885-886.

Question #24 **ANSWER=E**

Experimental studies have shown that the augmented bowel segment receives collateral blood flow from the native bladder. Interruption of the vascular pedicle may cause some decrease in the size of the augmented segment, but the augment segment remains intact. Intraoperative assessment of blood flow to the augmented segment immediately after ligation of the pedicle demonstrates decreased perfusion. However, perfusion returns to normal after eight weeks. Observation of the patient with repeat urodynamic studies is indicated. If this shows a significant decrease in functional capacity, consideration can be given to revision of the ileocystoplasty. Primary revision with sigmoid in this patient would be ill-advised without a bowel prep. There should be no need for a suprapubic tube as extravasation is not likely. Immediate re-augmentation would not be indicated. Subsequent demonstration of a reduction in capacity or compliance would be an indication for re-augmentation.

Adams MC, Joseph DB, Thomas JC: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 145, pp 3354-3355.

Question #25 **ANSWER=D**

In the setting of an ileal conduit urinary diversion, ammonium absorption occurs with chloride in exchange for hydrogen and bicarbonate ions, and may be accompanied by renal potassium wasting. This results in a hypokalemic, hyperchloremic metabolic acidosis. Hyponatremic, hypochloremic, hyperkalemic metabolic acidosis occurs with the use of jejunum due to sodium chloride loss with increased reabsorption of potassium and hydrogen ions. Use of stomach may lead to hypochloremic, hypokalemic metabolic alkalosis due to hydrogen and chloride loss with renal oversecretion of potassium to compensate for proton loss.

Dahl DM: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 97, pp 2310-2311.

Question #26 **ANSWER=C**

The response of renovascular hypertension to surgery or angiographic intervention depends upon the type of lesion and its location. Renin is a mediating substance for renovascular hypertension and a search for its origin is helpful. Significantly elevated renin from one renal vein and not the other leads to localization of a candidate for intervention. Further evaluation by imaging and provocative studies involving ACE inhibitors may also confirm the diagnosis and help decide whether surgical treatment is necessary.

Gulmi FA, Reiser IW, Spitalewitz S: Renovascular hypertension and ischemic nephropathy, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 45, p 1028.

Question #27 **ANSWER=C**

Hematuria during pregnancy may be mistaken for antepartum bleeding and is most commonly caused by an infection; however, other causes must be considered. Urothelial carcinoma of the bladder during pregnancy is uncommon but can present as hematuria. Ultrasound may detect bladder tumors incidentally or as part of a hematuria evaluation. Although ultrasound is a good screening technique, it is still not reliable and cystoscopy should be considered in all pregnant patients with documented gross hematuria or persistent microscopic hematuria. Bladder tumors in this age group almost always are low-grade and non-invasive, which is consistent with the findings on cystoscopy in this case. As such, these low-grade tumors do not require urgent removal. Therefore, immediate biopsy, transurethral resection, laser ablation, or early delivery for subsequent tumor resection are not indicated. In fact, immediate resection under anesthesia or cold cup removal in the office has the potential to induce uterine contractions and precipitate premature labor. The tumor resection should be delayed and performed in the standard fashion after a term delivery.

Spahn M, Bader P, Westermann D, et al: Bladder carcinoma during pregnancy. UROL INT 2005;74:153-159.

Question #28 **ANSWER=E**

Practice guidelines from the Infectious Disease Society of America suggest that three days of antibiotics is optimal therapy for acute uncomplicated cystitis in women, except for nitrofurantoin which requires five days of therapy to be equal to other antibiotics. TMP-SMX is the recommended agent since approximately 80% of E. coli are sensitive to this regimen. Fosfomycin (Monurol) may also be used but is single dose therapy. Beta-lactams are less effective in community-acquired organisms with resistance as high as 50% in some communities. Oral fluoroquinolones are not recommended for the treatment of uncomplicated cystitis in women due to the risk of adverse events with these agents.

Gupta K, Hooton TM, Naber KG, et al: International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: A 2010 update by the Infectious Disease Society of America and the European Society for Microbiology and Infectious Diseases. CLIN INFECT DIS 2011;52(5):e103-e120.

Question #29 **ANSWER=B**

A marked increase in serum PSA after a nadir within six months of external beam XRT is a sign of persistent local or occult metastatic prostate cancer and has a poor prognosis. Radiation-induced cellular injury or prostatitis may cause a minor rise in PSA which usually returns to normal within a few weeks. A "bounce" can be defined as a rise greater than 0.1 to 0.5 ng/mL followed by a durable decline and is especially common after brachytherapy, where it is reported to occur in 24% to 35% of men. These can start any time from 9 to 30 months after brachytherapy, with the majority of patients having a cumulative PSA rise of not more than 2 to 3 ng/mL. Prostatic infarct is rare following radiation therapy for prostate cancer and would likely be associated with a significantly elevated PSA. Six months after treatment with XRT is a sufficient time to assess for response. The ASTRO consensus panel defined biochemical failure as three consecutive rises in PSA level after a nadir. The Phoenix definition of biochemical recurrence as a rise of greater than 2 ng/mL above the PSA nadir is a better predictor of clinical outcomes. It is important to remember that PSA failure is not equivalent to clinical failure.

Lee EK, Thrasher JB: Management of biochemical recurrence after definitive therapy for prostate cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 119, p 2778.

Question #30 **ANSWER=C**

The most common complications of vesicostomy are bladder prolapse and stenosis. Late development of increasing hydronephrosis and a full bladder after vesicostomy would suggest the bladder is not draining well due to stenosis of the vesicostomy. If the vesicostomy is adequate, then consideration of upper tract obstruction would be necessary. Reflux and secondary ureterovesical obstruction may be diagnosed with a VCUG or renogram, respectively, but calibration of the stoma is the first step. While the child may eventually require an enterocystoplasty, this is not the next step. Bilateral cutaneous ureterostomy are rarely indicated as the secondary hydroureteronephrosis is usually secondary to a non-compliant bladder.

MacLellan DL, Bauer SB: Neuromuscular dysfunction of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 142, p 3282 e2.

Question #31 **ANSWER=C**

Ultrasound findings suggestive of testicular rupture include heterogenous echo pattern of the parenchyma and disruption of the tunica albuginea. There is wide variability in the false positive and false negative rate, and the consequences of a missed injury are significant; therefore, testicular exploration is the rule. Exceptions include small, minimally symptomatic hematomas, but these patients should be observed with serial exams. Forty percent of patients managed non-operatively for intratesticular hematoma develop infection or infarction. Drainage of the hematoma may salvage the testicle and reduce recovery time. The mechanism of injury and the fact that the mass is avascular makes a tumor unlikely.

Guichard G, El Ammari J, Del Coro C, et al: Accuracy of ultrasonography in diagnosis of testicular rupture after blunt scrotal trauma. UROL 2008;71:52-56.

Morey AF, Zhao LC: Genital and lower urinary tract trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 101, p 2383.

Question #32 **ANSWER=D**

Although it was initially thought that SWL was more successful after manipulation of ureteral stones into the kidney or placement of a stent alongside the stone to produce an "expansion chamber" that facilitates SWL fragmentation, subsequent studies showed no difference in stone-free rates in patients treated with or without stone or stent manipulation. Indeed, the AUA Guidelines Panel concluded that there is no advantage to placement of a ureteral stent or a nephrostomy tube for proximal ureteral stones with regard to stone-free rates, and that stents lead to decrease in quality of life. Placement of a ureteral catheter to the level of the stone will only help target the stone, specifically in radiolucent stones.

Assimos D, Krambeck A, Miller NL, et al: Surgical management of stones: AUA/ENDOUROLOGICAL SOCIETY GUIDELINE. Published April 2016. https://www.auanet.org/guidelines/stone-disease-surgical-(2016)

Question #33 ANSWER=C

The retrograde pyelogram reveals a ureterovaginal fistula and ureteral narrowing. The initial step should be placement of a double-J stent. If that is successful, that will improve her incontinence and potentially allow for healing of the fistula tract. Nephrostomy tube placement would be considered if a stent could not be placed. A vesicovaginal fistula is not present (normal VCUG); therefore, urethral catheter placement alone would not be helpful. Urethral catheter drainage with a ureteral stent may maximize drainage and increase the likelihood of closure of the ureterovaginal fistula. If the fistula does not heal with prolonged stent drainage, then ureteral reimplantation would be indicated.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, pp 2120-2122.

Question #34 ANSWER=E

Most Enterococci are sensitive to amoxicillin, extended-spectrum penicillin derivatives (e.g., piperacillin), nitrofurantoin, and fosfomycin. Fluoroquinolones, clindamycin, aminoglycosides, and cephalosporins are not reliably effective against this organism.

Schaeffer AJ, Matulewicz RS, Klumpp DJ: Infections of the urinary tract, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 12, p 256.

Question #35 ANSWER=C

In patients with low-stage NSGCT undergoing primary RPLND after scrotal violation, the scrotal scar should be widely excised with the spermatic cord remnant at the time of surgery. This patient, however, has higher volume disease and was treated with induction chemotherapy. Given the relative absence of local relapse after systemic treatment, scar excision, hemiscrotectomy, scrotal XRT, and inguinal lymph node dissection are not required for patients such as this who are treated with full-dose platinum-based regimens. Removal of the spermatic cord remnant, containing the gonadal vein, should be performed at the time of RPLND in both the primary and postchemotherapy settings.

Stephenson AJ, Gilligan TD: Neoplasms of the testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 34, p 791.

Rice KR, Cary CK, Masterson TA, Foster RS: Surgery of testicular tumors, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 35, pp 820-821.

Leibovitch I, Baniel J, Foster, RS, Donohue JP: The clinical implications of procedural deviations during orchiectomy for nonseminomatous testis cancer. J UROL 1995;154:935-939.

Question #36 ANSWER=C

Based on the HIPAA regulations of 1996, a patient has the right to inspect and copy medical information that may be used to make decisions about their care. These requests should be submitted in writing. Most commonly they will include medical and billing records. The patient is not entitled to psychotherapy notes or information compiled in a reasonable anticipation of or for use in a civil, criminal or administrative action or proceedings. If the access to medical information is denied, the patient has the right to request a review by an independent party.

Summary of the HIPPA Privacy Rule: US DEPARTMENT OF HEALTH AND HUMAN SERVICES. Health Insurance Portability and Accountability Act of 1996.
https://www.hhs.gov/hipaa/for-professionals/privacy/laws-regulations/index.html

Question #37 ANSWER=C

Enteric hyperoxaluria is commonly associated with inflammatory bowel disease or short-gut syndrome. Malabsorption increases the colonic permeability of oxalate by causing fat and bile to bind to intraluminal calcium, leaving oxalate unbound and free to traverse the colonic epithelium. Restricting oxalate is generally insufficient as the cause is not an overabundance of oxalate and compliance is difficult for regimens intending to eliminate all oxalate sources. Oral calcium binds to the free oxalate and prevents its absorption. Thiazide diuretics are most commonly used in hypercalciuria. Potassium citrate is useful for prevention of stones; however, calcium supplementation is more important in patients with enteric hyperoxaluria without evidence of hypocitraturia on the 24-hour urine collection. Sodium reduction is also useful in general but most useful in patients with hypercalciuria.

Pearle MS, Antonelli JA, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 51, pp 1181-1187.

Question #38 **ANSWER=D**

Over 90% of antenatally detected megaureters will improve with conservative management. The T 1/2, or Lasix washout time, especially in neonatal megaureters is not a reliable indicator of obstruction, so a normal creatinine and symmetric renal function support initial observation in this child. An end cutaneous ureterostomy is indicated in the neonate with a megaureter and sepsis, ipsilateral reduced function (less than 35% in a neonate), or in cases of marked or increasing hydroureteronephrosis. A tapered reimplant is almost never indicated in a neonate with a megaureter. MR urography gives improved anatomic detail, but the site of narrowing is fairly constant in megaureters and exact delineation is not required to determine the best management. Conservative management with follow-up ultrasonography is the best next step since this will likely spontaneously improve.

Olsen LH, Rawashdeh YFH: Surgery of the ureter in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 133, pp 3066-3067.

Question #39 **ANSWER=C**

Multiple sclerosis may involve the central and/or peripheral nervous systems. Depending on the location, level and extent of demyelination, a variety of urodynamic patterns may result. Pelvic floor EMG activity in this individual is increased during voiding which suggests detrusor external sphincter dyssynergia, a urodynamic finding that exists only with neurological lesions between the pons and the sacral spinal cord. Lesions at or distal to the sacral spinal cord would likely result in detrusor areflexia and lesions above the pons result in detrusor overactivity with synergistic activity of the proximal and distal sphincter mechanisms.

Wein AJ, Dmochowski RR: Neuromuscular dysfunction of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 75, p 1769.

Question #40 **ANSWER=D**

RCC in von Hippel Lindau (VHL) disease is characterized by both solid renal masses and renal cysts that contain either frank carcinoma or a lining of abnormal clear cells that represent incipient carcinoma. Appropriate surgical treatment of RCC in VHL, therefore, requires excision of all solid and cystic renal lesions, preferably through a nephron sparing approach, rather than through radical nephrectomy. Although partial nephrectomy represents effective initial treatment of patients with RCC and VHL disease, it should be withheld until tumor size reaches 3 cm or more. In this scenario, both right renal masses are less than 3 cm and should be observed. This is because most of these patients will develop locally recurrent RCC with the need for repeat surgery. The 3 cm cut point, therefore, reduces the number of surgical interventions to optimize renal function and to minimize the risk of metastatic disease. This 3 cm rule also applies to patients with hereditary papillary RCC and Birt-Hogg-Dube syndrome, but not for patients with hereditary leiomyomatosis RCC. Because repeated partial nephrectomy can be challenging, a number of centers are moving toward thermal ablative treatment techniques in the setting of recurrent disease, though these have the best results when reserved for those with tumors that are less than 3 cm in size.

Campbell SC, Lane BR: Malignant renal tumors, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 57, pp 1321-1324.

Question #41 ANSWER=C

The likelihood of obstructive azoospermia is 96% with testis longitudinal axis greater than 4.6 cm and FSH less than 7.6 IU/L. However, the most significant predictor of any form of reproductive intervention is maternal age, with female fecundity declining precipitously after age 37. The decision to perform microsurgical scrotal ductal reconstruction or to obtain sperm from the testis for in vitro fertilization and ICSI rests on evaluation of the female partner, especially after age 37. Transrectal ultrasound is not necessary if semen volumes are normal (greater than 1.5 mL) as ejaculatory ductal obstruction is unlikely.

Jarow J, Sigman, Kolettis PN, et al: The evaluation of the azoospermic male: AUA BEST PRACTICE STATEMENT. Updated May 2017.
http://www.auanet.org/documents//education/clinical-guidance/Male-Infertility-b.pdf

Jarow J, Sigman, Kolettis PN, et al: Male infertility: The management of obstructive azoospermia: AUA BEST PRACTICE STATEMENT. Updated May 2017.
http://www.auanet.org/documents//education/clinical-guidance/Male-Infertility-c.pdf

Niederberger CS: Male infertility, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 24, p 573.e5.

Question #42 ANSWER=D

The treatment of men with isolated lymph node metastasis at the time of prostate cancer surgery has been controversial. The use of adjuvant XRT for adverse pathologic characteristics at the time of prostatectomy has been evaluated in randomized clinical trials. However, patients with lymph node metastasis, such as this patient, were not included in these trials, and it is generally felt that such individuals are at risk of systemic rather than local recurrence. ECOG 3807 evaluated the use of immediate hormonal ablation versus observation in men with isolated lymph node metastases noted on final pathology after radical prostatectomy. The patients treated with immediate therapy had improved overall and cancer-specific survival relative to men undergoing initial observation. No trial has been performed showing an advantage of any chemotherapy treatment in the adjuvant setting. The advantage of short-term androgen deprivation therapy, with or without XRT, in this setting has not been established.

Meng MV, Carroll PR: Treatment of locally advanced prostate cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 118, pp 2762-2763.

Question #43 ANSWER=B

After orthotopic urinary reconstruction, patients may develop new voiding difficulties or incontinence, and a urodynamic evaluation is appropriate to evaluate storage function and bladder outlet. Micturition following orthotopic neobladder diversion is accomplished through abdominal straining. On a urodynamic study, this would be indicated by increased abdominal and vesical pressure accompanied by a relaxation of the external urinary sphincter and a decrease in urethral pressure.

Skinner EC, Daneshmand S: Orthotopic urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 99, p 2366.

Palleschi G, Pastore AL, Ripoli A, et al: Videourodynamic evaluation of intracorporeally reconstructed orthotopic U-shaped ileal neobladders. UROL 2015;85:883-889.

Question #44 ANSWER=E

This patient has a residual retroperitoneal mass after salvage chemotherapy with stem cell transplant with normalized serum tumor markers. The recommended management is surgical resection in the form of RPLND. The histologic distribution in this setting is notable for a higher rate of viable germ cell tumor (53%) and a lower rate of necrosis (26%) than patients undergoing RPLND after induction chemotherapy. Given this rate of viable disease, observation is not appropriate. The major limitation of fluorodeoxyglucose (FDG) PET for evaluation of NSGCT is that teratoma is not FDG avid. In a prospective study by Oeschle, et al, of 121 patients with NSGCT and a residual mass following chemotherapy, the accuracy of PET to predict tumor viability was 56% which was no better than CT (55%) or serum tumor markers (56%). Thus, PET has no role in the assessment of residual masses in patients with a NSGCT, and should be reserved for use in patients with seminoma who have a residual mass greater than 3 cm after chemotherapy, as teratoma is not a concern in such cases. Similarly, percutaneous biopsy may not be able to sample the mass adequately, particularly given the potential for treatment effect in the tissues and may lead to a false negative. XRT does not play a role in the management of a residual mass in patients with NSGCT.

Stephenson AJ, Gilligan TD: Neoplasms of the testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 34, p 805.

Rice KR, Cary CK, Masterson TA, Foster RS: Surgery of testicular tumors, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 35, p 831.

Testicular cancer: NATIONAL COMPREHENSIVE CANCER NETWORK GUIDELINES, 2018. https://www.nccn.org/professionals/physician_gls/pdf/testicular.pdf

Question #45 ANSWER=C

The patient has a pathologic phimosis that does not allow adequate urinary drainage. Observation is only appropriate in the setting of physiologic phimosis in which the foreskin is not retractable due to normal physiologic adhesions, as opposed to pathologic phimosis, which is development of a dense fibrotic ring from chronic inflammation. Treatment of pathologic phimosis with a topical steroid ointment (0.05% betamethasone) is effective in up to 90% of cases in relieving the phimosis and allowing adequate retraction of the foreskin. If the patient had more acute problems such as severe balanitis or more obstructive voiding symptoms, then surgical intervention with a dorsal slit, preputioplasty, or circumcision may be appropriate. Sitz baths alone are unlikely to rectify the problem.

Orsola A, Caffaratti J, Garat JM: Conservative treatment of phimosis in children using a topical steroid. UROL 2000;56:307-310.

Palmer LS, Palmer JS: Management of abnormalities of the external genitalia in boys, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 146, pp 3369-3370.

Question #46 ANSWER=E

Revascularization is typically recommended in renal artery stenosis when greater than 75% occlusion occurs either bilaterally or in a solitary kidney. With severe renal loss (serum creatinine > 4 mg/dL), the likelihood of renal recovery is substantially reduced and revascularization is not recommended. Atherosclerotic renal vascular hypertension should be treated medically, typically with at least three medications, before resorting to revascularization. Medial fibroplasia is not typically progressive; thus, revascularization for this process is rarely required.

Gulmi FA, Reiser IW, Spitalewitz S: Renovascular hypertension and ischemic nephropathy, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 45, pp 1030-1031, 1039.

Question #47 ANSWER=D

Electromagnetic generators are more controllable and reproducible than electrohydraulic generators because they do not incorporate a variable in their design such as the underwater spark discharge. The introduction of energy into the patient's body over a large skin area causes less pain. The water bath, the electric spark, and the focal zone size have no direct effects on patient pain. The kilovolt does not impact the amount of pain.

Matlaga BR, Krambeck AE, Lingeman JE: Surgical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 54, p 1266.

Question #48 ANSWER=E

Prophylactic antibiotics should ideally have low serum and high urinary concentrations as well as minimal effect on the fecal flora. All of the listed antibiotics are reasonable prophylactic agents other than Augmentin which has too wide a spectrum. In this child, amoxicillin is not a good choice since the greatest risk of recurrent infection is in the first few weeks after the initial infection, and the fecal flora may be resistant to the therapeutic antibiotic that was used. Nitrofurantoin cannot be used in children with G6PD deficiency and, like trimethoprim/sulfamethoxazole, should be avoided in the first few months of life since it can cause neonatal hyperbilirubinemia. Therefore, cephalexin is the best choice.

Cooper CS, Storm DW: Infection and inflammation of the pediatric genitourinary tract, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 127, p 2945.

Question #49 ANSWER=C

The majority of patients with congenital bilateral absence of the vas deferens (CBAVD) are found to have either a mutation or a 5T polymorphism of the CFTR (cystic fibrosis transmembrane regulator protein) gene. Men with CBAVD may also suffer from subclinical or mild pulmonary or pancreatic dysfunction arising from the same CFTR gene mutation or polymorphism. In this scenario, the next step is cystic fibrosis mutation analysis on both partners. Genetic testing that does not detect a mutation does not necessarily rule out the presence of a CFTR mutation, and therefore, both the male and female partner should undergo this testing. If both the male and female partner have a CFTR mutation, the couple's children have a 25% chance of having mutations in both inherited CFTR genes, and thus, developing clinical cystic fibrosis. Diagnostic testicular biopsy is not necessary since CBAVD is associated with obstructive azoospermia. Scrotal ultrasound and scrotal exploration will not result in detection of the vas deferens; absence of the vas deferens is diagnosed by physical examination. Patients with CBAVD characteristically have normal karyotypes and do not have AZF deletions of the Y-chromosome. While donor insemination is an option, it is not the next step for this couple that "would like to pursue all options."

Niederberger CS: Male infertility, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 24, pp 571, 577-578.

Jarow J, Sigman M, Kolettis PN, et al: The evaluation of the azoospermic male: AUA BEST PRACTICE STATEMENT. Updated May 2017.
http://www.auanet.org/documents//education/clinical-guidance/Male-Infertility-b.pdf

Jarow J, Sigman M, Kolettis PN, et al: The optimal evaluation of the infertile male: AUA BEST PRACTICE STATEMENT. Updated May 2017.
http://www.auanet.org/documents//education/clinical-guidance/Male-Infertility-d.pdf

Question #50 **ANSWER=A**

The cytochrome P450 (CYP3A4) pathway is the principle metabolic system for the metabolism of sildenafil, tadalafil, avanafil, and vardenafil. Potent CYP3A4 inhibitors like the protease inhibitors, indinavir and ritonavir, ketoconazole, and macrolide antibiotics can increase serum levels of PDE5 inhibitors. The initial dose of PDE5 inhibitor should be lowered in patients taking potent CYP3A4 inhibitors. Indinavir is the only potent CYP3A4 inhibitor listed. Warfarin and tacrolimus are not CYP3A4 inhibitors. Doxycycline is a moderate CYP3A4 inhibitor.

Pontari MA: Sexually transmitted diseases, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 15, p 384.

Question #51 **ANSWER=D**

Narrowed pulse pressures (rise in diastolic pressure) precede difficulty with ventilation, hypercarbia, and a rise in central venous pressure. Extravasated irrigant increases abdominal pressure leading to decreased venous return, and thus, narrowing the pulse pressure. Distension is not appreciated in the prone position until later in the course. Hypotension would signal the possibility of significant hemorrhage. Increasing ventilatory pressures is a later sign when there is significant fluid in the peritoneal cavity and when the patient is returned to the supine position.

Matlaga BR, Krambeck AE, Lingeman JE: Surgical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 54, p 1282.

Question #52 **ANSWER=C**

Patients with suspected pheochromocytoma rarely present with normal or mildly elevated plasma catecholamines. When signs and symptoms of pheochromocytoma are present and plasma catecholamines are minimally elevated, it is critical that the cause of hypertension is determined. The best way to distinguish between essential hypertension and pheochromocytoma in this situation is an oral clonidine test. Patients with essential hypertension will experience a significant drop in norepinephrine due to suppression of production by the sympathetic nervous system, while those with pheochromocytoma will not. The clonidine test is not useful in assessing for renal artery stenosis, adrenal hyperplasia, or idiopathic hyperaldosteronism.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, p 1550.

Question #53 ANSWER=D

In the case of traumatic amputation of the penis, reconstruction with simple urethral and corporal re-anastomosis should be attempted. Reconstruction alone can preserve erectile function, glans vascularity, and urethral continuity. Prompt macroscopic reconstruction is preferred over delayed surgery for microsurgical re-anastomosis. Microvascular re-anastomosis is required for preservation of skin (dorsal artery and vein re-anastomosis) and sensation (dorsal nerve re-anastomosis). Erectile function results are similar with macroscopic and microscopic approaches. The paired dorsal arteries travel along the dorsum of the corpora cavernosa. They give branches to the circumflex arteries which supply the corpus spongiosum; the dorsal arteries then arborize to the glans penis. While the dorsal arteries do give perforators to the corpora cavernosa, their contribution to erectile function is not consistent. It is the arborization in the glans penis which, through retrograde flow, helps supply the distal shaft skin.

Wessells H, Long L: Penile and genital injuries. UROL CLIN N AM 2006;33:117-126.

Morey AF, Zhao LC: Genital and lower urinary tract trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 101, p 2381.

Question #54 ANSWER=E

This patient has genital herpes (herpes simplex virus, HSV), of which 85-90% are caused by HSV-2 and 10-15% are caused by HSV-1. Initial genital herpes infection is often associated with constitutional flu-like symptoms. While vesicular eruptions can be found on physical exam, women especially may present with atypical lesions, such as abrasions, fissures, or itching. Empiric treatment may be initiated. Antiviral creams are not helpful for genital herpes. Oral acyclovir has been shown to prevent recurrence of genital herpes and associated symptoms. Hydrocortisone cream is not recommended for the treatment of genital herpes; however, recent studies suggest that a combination of topical acyclovir and hydrocortisone cream may reduce the recurrence of herpes labialis. Ceftriaxone is an appropriate treatment for chancroid but not genital herpes. Topical imiquimod is not recommended for treatment of routine genital herpes but is being used to treat recalcitrant cases of acyclovir-resistant herpes in immunocompromised hosts.

Pontari MA: Sexually transmitted diseases, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 15, p 376.

Perkins N, Nisbet M, Thomas M: Topical imiquimod treatment of aciclovir-resistant herpes simplex disease: Case series and literature review. SEX TRANSM INFECT 2011;87:292-295.

Question #55 ANSWER=D

This retrograde urethrogram is an adequate study and does not require an antegrade study. The study shows a 5 cm mid- to proximal bulbar urethral stricture. The next step is urethroplasty with graft or flap. Some evidence would support extended excision and primary anastomosis in this patient; however, only in the most experienced of hands. The stricture is too long (> 1.5 cm) for endoscopic manipulation. Perineal urethrostomy and two stage repair would be a more morbid approach for this stricture which could be successfully repaired in a single stage.

Wessells H, Angermeier KW, Elliott SP, et al: Male urethral stricture: AUA GUIDELINE. Published April 2016.
https://www.auanet.org/guidelines/urethral-stricture-(2016)

McCammon KA, Zuckerman JM, Jordan GH: Surgery of the penis and urethra, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 40, pp 923-925.

Question #56 ANSWER=B

The finding of a skin dimple or cleft, discoloration, hemangioma, hair tuft, or other cutaneous malformation over the sacrum raises the question of an underlying spinal cord problem, such as tethering or lipoma involving the distal spinal cord. It is important to diagnose this promptly as there commonly will be progressive neurological impairment over time which will not be reversible with later intervention. Early treatment of tethered cord may preserve full neurological abilities. Spinal ultrasound is very useful in assessing the lower spinal cord in children under four months, as there is not full ossification of the bony structures, and thus, image quality is excellent. In addition, ultrasound holds the advantage over MRI scan in that it will not require general anesthesia and it is also much less costly. There is good correlation of ultrasound findings with MRI scan in this age group. If the ultrasound is normal, then no further imaging is needed. However, if there is an abnormality on spinal ultrasound, further evaluation with an MRI scan may be needed for clinical decision-making. Invasive lower urinary tract evaluations such as VCUG and urodynamic studies are premature, unless there is a diagnostic finding of a spinal abnormality.

MacLellan DL, Bauer SB: Neuromuscular dysfunction of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 142, p 3280.

Question #57 ANSWER=E

This child with a neurogenic bladder has chronic bacteruria secondary to CIC. Most children on CIC do not have symptomatic infections, but this boy has developed renal scarring in spite of prophylaxis. This is an indication for a more aggressive approach to eliminate ascending infection. Surgical repair of VUR is the most appropriate choice. In the presence of scarring, observation (no change in therapy) is inappropriate. Increasing the frequency of CIC will not decrease the incidence of bacteruria and will not decrease the risk to the upper tracts since he has a low pressure bladder. Antimuscarinics will not be beneficial in what is already a low pressure bladder. A change in prophylaxis risks future infections and additional renal injury. Vesicostomy would be difficult to manage in a three-year-old and require continuous diaper dependency.

MacLellan DL, Bauer SB: Neuromuscular dysfunction of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 142, p 3283.

Question #58 ANSWER=A

In this patient with symptomatic metastatic disease and no evidence of spinal cord compression, prevention of testosterone surge and potential symptomatic flare is the best therapy. Leuprolide monotherapy is associated with an initial temporary testosterone increase and bicalutamide (an anti-androgen) would not cause immediate improvement of symptoms. Although estrogen would bring about testosterone decline, degarelix (a LH-RH antagonist) would bring about quicker castrate levels (within three days) and would accomplish this faster than combination LH-RH agonist and anti-androgen. Ketoconazole and bilateral orchiectomy are other options to rapidly reduce testosterone levels and can do so within 12 hours. The time to achieve castrate levels of testosterone is one to two weeks with estrogen, and three to four weeks for LH-RH agonists.

Klotz L, Boccon-Gibod L, Shore N, et al: The efficacy and safety of degarelix: A 12-month, comparative, randomized, open-label, parallel-group phase III study in patients with prostate cancer. BJUI 2008;102:1531-1538.

Question #59 ANSWER=B

Bacteria may convert urinary nitrates into nitrites and this may be used as evidence of UTI.

Gram-negative bacteria commonly do this, while Gram-positive species generally do not. One very important gram-negative exception is Pseudomonas, which does not contain the enzymatic machinery to make this conversion. Thus, a negative nitrite by urinary dipstick in this patient with symptoms and other urinalysis findings suggestive of UTI should likely be treated presumptively pending culture, and Pseudomonas is one of the very important, aggressive pathogens that must be considered in this circumstance.

Gerber GS, Brendler CB: Evaluation of the urologic patient: History, physical examination, and urinalysis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 1, p 20.

Question #60 **ANSWER=A**

Sperm DNA integrity has garnered much interest over the last decade as a possible source of pathology for couples trying to conceive. Sperm DNA is complexed with protamines, resulting in a DNA structure that is six times more compact than the DNA found in somatic cells. Some investigators hypothesize that abnormally high levels of sperm DNA fragmentation are associated with abnormal reproductive outcomes, including lower fertilization, pregnancy, live birth rates, and higher rates of miscarriage. The literature on outcomes associated with abnormally high sperm DNA fragmentation levels is divided and inconsistent. Some studies have reported that elevated levels of sperm DNA fragmentation are associated with lower rates of pregnancy by intercourse, but many couples still conceive via intercourse despite elevated sperm DNA fragmentation. At this time, the World Health Organization categorizes sperm DNA integrity tests as "research procedures". Given the conflicting nature of the literature regarding elevated DNA fragmentation levels and reproductive outcomes, the AUA states, "Currently, the tests have inadequate sensitivity and specificity to be of value as screening tests for pregnancy by intercourse". Additionally, there are no therapies at this time that have been proven to correct an abnormal DNA fragmentation result. Since this couple has only attempted conception for four months, they should continue with intercourse for a total of 12 months. If no pregnancy results after 12 months of timed intercourse, then intrauterine insemination with ovulation induction or ICSI with ejaculated sperm could be considered. At this time, there is no evidence that men with elevated sperm DNA fragmentation rates have an increased risk of offspring with congenital abnormalities, so this line of counseling is not indicated. Finally, karyotype of the man is not indicated given that his semen analysis was normal.

Jarow J, Sigman M, Kolettis PN, et al: The optimal evaluation of the infertile male: AUA BEST PRACTICE STATEMENT. Updated May 2017.
http://www.auanet.org/documents//education/clinical-guidance/Male-Infertility-d.pdf

Niederberger CS: Male infertility, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 24, pp 569-570.

World Health Organization (WHO): WHO LABORATORY MANUAL FOR THE EXAMINATION AND PROCESSING OF SEMEN - EBOOK, ed 5. Geneva, World Health Organization, 2010.

Question #61 **ANSWER=D**

Uroflow is a screening tool for patients with lower urinary tract symptoms. A peak flow rate less than 15 mL/sec is considered abnormal. However, this study is unable to differentiate between bladder outlet obstruction and detrusor underactivity. If the bladder volume is less than 125-150 mL, the flow rate measurements are inconclusive. The bladder volume is the voided volume plus PVR. This patient may benefit from a pressure-flow urodynamic study to further elucidate the cause of his LUTS. However, this would usually be considered after a failed trial of medications.

McNicholas TA, Speakman MJ, Kirby RS: Evaluation and nonsurgical management of benign prostatic hyperplasia, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 104, pp 2468-2469.

Question #62 **ANSWER=B**

A hypercoagulable state can occur in nephrotic syndrome with urinary loss of the natural anticoagulants: antithrombin III, protein C, and protein S. Hyperhomocysteinemia is common in ESRD, and has been associated with thrombophilia. Antiphospholipid antibodies are found in 30% to 50% of patients with systemic lupus erythematosus, a cause of ESRD. Loss of antithrombin III and increased antiphospholipid antibodies increase the risk of thrombosis of renal allografts, dialysis access devices, and postoperative thromboembolic events. Thus, anticoagulation should be considered in these patients.

Gritsch HA, Blumberg JM: Renal transplantation, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 47, pp 1072-1073.

Question #63 **ANSWER=B**

Performance sports drinks may increase urinary citrate and pH lending a protective effect against urinary lithogenicity. However, these drinks have a high fructose and total carbohydrate content so they should not be recommended as the primary means of hydration for stone formers. Though the sodium content may be high in these drinks, they do not lead to hypernatriuria. Sports drinks have no effect on urinary calcium, oxalate, and uric acid.

Goodman JW, Asplin JR, Goldfarb DS: Effect of two sports drinks on urinary lithogenicity. UROL RES 2009;37:41-46.

Question #64 **ANSWER=E**

In general, when comparing the use of colon and ileum for urinary diversion, there are few differences that would favor one over the other except in special circumstances. One of the most common special circumstances is the setting of prior pelvic radiation therapy. In this instance, the use of transverse colon is often favored as it is usually out of the radiated field. Probably because of its larger diameter, the incidence of postoperative bowel anastomotic obstruction with colon is less than that for ileum. Construction of an antirefluxing anastomosis with a submucosal technique is easier with colon segments. Colon segments can usually reliably be mobilized to reach anywhere in the abdomen or pelvis. Although the same electrolyte abnormalities are possible with either segment, nutritional problems (Vitamin B12 deficiency and bile acid salt absorption) are less with colon when compared to ileum as long as the ileocecal valve is left intact.

Dahl DM: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 97, pp 2308-2314.

Roth JD, Koch MO: Metabolic and nutritional consequences of urinary diversion using intestinal segments to reconstruct the urinary tract. UROL CLIN N AM 2018;45:19-24.

Question #65 **ANSWER=D**

The 2016 AJCC (8th edition) staging for penile cancer includes several changes. The new Ta definition does not allow any overt destructive invasion but encompasses other non-invasive squamous cell carcinoma types including basaloid, warty, papillary, and mixed types. T1 is substratified into groups with different risks of nodal involvement, with T1b now including perineural invasion and sarcomatoid changes as well as lymphovascular invasion. A critical change was inclusion of only corpus spongiosum as T2 and moving corpus cavernosum to T3. Currently, urethral invasion can be either T2 or T3, whereas previously, it was classified as T3. pN1 is now increased to up to 2 unilateral positive lymph nodes while pN2 is greater than two positive lymph nodes (unilateral or bilateral). For the first time, nodal staging is divided into both clinical and pathologic staging schemes. With a palpable, fixed nodal mass, regardless of the size or unilateral/bilateral involvement, the clinical lymph node status is cN3. In patients with cN3 disease, neoadjuvant chemotherapy is now recommended as first line treatment prior to node dissection.

Amin MB, Edge SB, Greene FL, et al: AJCC CANCER STAGING MANUAL, ed 8. New York, Springer, 2017.

Pettaway CA, Crook JM, Pagliaro LC: Tumors of the penis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 37, p 852.

Question #66 **ANSWER=A**

During a vaginal approach to a high riding post-hysterectomy fistula, a peritoneal flap is preferred. It is relatively easy to raise a well-vascularized flap of peritoneum in this location. A Martius flap would be very difficult to mobilize to that location in the vagina without compromising the blood supply. An omental flap is occasionally useful from a vaginal approach if it had previously been secured in the pelvis from prior surgeries. A gracilis flap can be utilized but is typically not necessary for a primary repair. A labial myocutaneous flap can be utilized, particularly if there is significant foreshortening of the vagina or loss of vaginal mucosa, but is also not usually used for a primary repair.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, p 2116.

Question #67 **ANSWER=A**

In the rare patient who is asymptomatic despite vaginal exposure of mesh, intervention may not be required. Local estrogen replacement therapy can rarely facilitate tissue healing; however, it would be best to continue as she has vaginal atrophy. More often, patients, or their sexual partners, are bothered by the vaginal extrusion. In these cases, excision of the exposed mesh with approximation of the vaginal wall is warranted. Mesh excision in this case would be unnecessary and place her at risk of recurrent stress incontinence. Cessation of sexual activity will not affect healing of tissue over the extruded mesh.

Dmochowski RR, Osborn DJ, Reynolds WS: Slings: Autologous, biologic, synthetic, and midurethral, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 84, pp 2027-2028.

Question #68 **ANSWER=B**

This patient likely has an acute interstitial nephritis (AIN) caused by the proton pump inhibitor, omeprazole. The findings of microscopic hematuria, proteinuria, and renal failure, along with rash and joint pain are suggestive of AIN. The first step should be to stop the causative agent. Oral contraceptives are not known to induce AIN. Although oral ACE inhibitor (lisinopril) and systemic steroid (prednisolone) are indicated in the treatment of AIN, the first step should be to remove the potential causative agent.

Goldfarb DA, Poggio ED, Demirjian S: Etiology, pathogenesis, and management of renal failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 46, p 1041.

Question #69 **ANSWER=C**

After renal trauma, the likelihood of renal exploration, renorrhaphy, and nephrectomy is associated with the grade of injury. For example, grade 4 injuries have a 64 fold higher likelihood of needing nephrectomy than a grade 1 injury. The literature shows that for grade 3 and 4 injuries, medial hematoma, hematoma > 3.5 cm in thickness, and the presence of a vascular contrast blush are associated with increased risk of bleeding and need for intervention. The presence of such findings should alert the urologist to the potential need for angiography and selective embolization of segmental vascular injuries. While urinary extravasation and devitalized fragments increase the risk of urinoma formation, they are not associated with higher rates of bleeding. Neither location of laceration or mechanism of injury predict complications independent of grade.

Dugi DD III, Morey AF, Gupta A, et al: American Association for the Surgery of Trauma grade 4 renal injury substratification into grades 4a (low risk) and 4b (high risk). J UROL 2010;183:592-597.

Santucci RA, Chen ML: Upper urinary tract trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 50, p 1150.

Question #70 **ANSWER=B**

Up to one-third of women with unilateral renal agenesis (URA) have an abnormality relating to Wolffian duct development. Conversely, 43% of women with genital anomalies, like duplicated vagina, will have URA which needs to be further evaluated with a renal ultrasound as in this patient. As such, it is imperative to obtain a renal ultrasound to assess the upper collecting system and kidney on each side. Pelvic MRI scan can further delineate the uterine and vaginal anatomy but would miss renal pathologies. VCUG does not assess for upper tract obstruction or renal agenesis. Vaginoscopy may eventually be needed and consideration made for incising any vaginal septum present, but the initial evaluation in this clinical scenario is to first understand what related anomalies are present.

Shapiro E, Telegrafi S: Anomalies of the upper urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 130, p 2982.

Question #71 **ANSWER=E**

This newborn most likely has true hermaphroditism, known now as ovotesticular disorder of sex development (DSD). This is defined as having the presence of both ovarian and testicular tissue which can be in the form of testis, ovary, or ovotestis. The palpable gonad in this patient very likely represents either testis or ovotestis as these are the gonads that may partially descend. The most common karyotype in ovotesticular DSD is 46,XX though many patients will have a second mosaic cell line with a Y-chromosome present. The degree of sexual ambiguity in these patients varies. All of the other diagnoses here are unlikely. Exogenous exposure to androgens in an XX fetus would be expected to have non-palpable gonads as there are normal ovaries present. Pure gonadal dysgenesis results in normal genitalia and not the appearance described in this patient. Partial androgen insensitivity occurs in 46,XY patients and since these patients do have testes, they produce Müllerian inhibitory substance (MIS) and should not have vaginal development. Mixed gonadal dysgenesis will commonly demonstrate one palpable testis with a streak on the other side, but their karyotype is mosaic, 46,XY/45,XO.

Diamond DA, Yu RN: Disorders of sexual development: Etiology, evaluation, and medical management, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 150, pp 3484-3485.

Question #72 ANSWER=E

In the Trendelenburg position, shoulder braces should not be used due to the risk of injury to the brachial plexus. This manifests as weakness and tingling in the arms and fingers. In addition, the risk for injury to the brachial plexus is also accentuated by abducting the arms more than 90 degrees from the tucked position. Care should be taken to avoid lowering the robotic arms onto the dorsum of the foot when docking, which may result in pain along the dorsum of the foot. Weak leg adduction may result from injury to the obturator nerve during pelvic lymph node dissection. Injury to the genitofemoral nerve on the psoas muscle results in numbness along the anterior thigh. Hyperextension of the hip to allow docking of the robot in the Trendelenburg position results in compression of the femoral nerve by the inguinal ligament, resulting in weak leg flexion and paresthesias.

Ordon M, Eichel L, Landman J: Fundamentals of laparoscopic and robotic urologic surgery, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 10, p 222.

Question #73 ANSWER=D

In a meta-analysis of four randomized trials in 286 patients, Galsky and colleagues have concluded that the substitution of carboplatin for cisplatin resulted in a statistically significant (three fold) decrease in the probability of achieving a complete response and a significant decrease in the overall response rate. Despite the decreased response rate, no significant effect on survival could be documented. In general, the renal safety profile is improved with the use of carboplatin. The duration of therapy is not affected by the substitution of carboplatin.

Guzzo TJ, Vaughn DJ: Management of metastatic and invasive bladder cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 94, p 2237.

Galsky MD, Chen GJ, Oh WK, et al: Comparative effectiveness of cisplatin-based and carboplatin-based chemotherapy for treatment of advanced urothelial carcinoma. ANN ONCOL 2012;23:406-410.

Ho GY, Woodward N, Coward JIG: Cisplatin versus carboplatin: comparative review of therapeutic management in solid malignancies. CRIT REVIEW ONCOL HEMATOL 2016;102:37-46.

Question #74 **ANSWER=E**

Long, proximal ureteral defects are difficult to manage. The surgeon must be ready to use a variety of approaches depending on the intraoperative findings. Endopyelotomy is contraindicated with strictures over 2 cm in length because of poor outcomes. Ureteroureterostomy is ideal for short upper or mid-ureteral strictures but is not possible with long defects as in this case. Transureteroureterostomy is contraindicated in those with nephrolithiasis. Ileal ureter should be considered for long upper ureteral defects in those with serum creatinines of < 2.0 mg/dL. Fallopian tube and appendiceal substitutions are not reliable reconstructive techniques. Other options for this patient include renal mobilization combined with either a long Boari flap (if the bladder is large) or autotransplantation. Ideal patients for ureterocalicostomy have shorter upper ureteral strictures and thin lower pole renal parenchyma. In addition, a nephrectomy may also be considered as a last resort.

Nakada SY, Best SL: Management of upper urinary tract obstruction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 49, pp 1131-1141.

Question #75 **ANSWER=D**

It has been reported that up to 50% of children with reconstructed bladders will develop bladder stones in their lifetime. Open cystolithotomy has been the traditional approach to treat bladder stones. In this young child with a significant stone burden, both transurethral and transstomal cystolithotripsy procedures are not ideal due to small caliber channels requiring multiple scope passes. SWL may fragment the stones, but even with irrigation, the fragments will not likely clear. A laparoscopic approach is an option, but due to the previous abdominal procedures, the laparoscopic approach has an increased risk of intra-abdominal organ injury. Percutaneous cystolithotripsy has been shown to be effective with shorter hospital stays, smaller scars, and less indwelling catheter time postoperatively than the traditional open cystolithotomy.

Schneck FX, Ost MC: Surgical management of pediatric stone disease, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 135, p 3118.

Question #76 ANSWER=D

This patient has bothersome LUTS that would likely benefit from therapy. Based on the findings, evaluation with a pressure-flow study would not be necessary at this point. Based on the Adult Urodynamics Guidelines, pressure-flow urodynamic study should be done to evaluate for urodynamic evidence of obstruction, particularly when invasive or irreversible therapies are being considered. At this point, empiric therapy with an alpha-blocker such as tamsulosin would be appropriate. However, this therapy should be instituted after his cataract surgery to eliminate the risk of floppy iris syndrome, which is a known risk of cataract surgery in patients taking alpha-blockers. Finasteride would not be an appropriate therapy for this patient as it is not recommended for use in men with LUTS that do not have an enlarged prostate. Antimuscarinics would not be primary therapy in a patient with obstructive symptoms and elevated PVR.

McVery KT, Roehrborn CG, Avins AL, et al: Benign prostatic hyperplasia benign prostatic hyperplasia: AUA GUIDELINE. Updated December 2016.
http://www.auanet.org/documents/education/clinical-guidance/Benign-Prostatic-Hyperplasia.pdf

Question #77 ANSWER=E

The patient has a high complexity (R.E.N.A.L. score 12 and 5.0 cm) mass with normal renal function, and significant co-morbid conditions. According to the most recent AUA Guideline for small renal masses, statement #19: "Physicians should consider radical nephrectomy for patients with a solid...renal mass where increased oncologic potential is suggested by tumor size... In this setting, radical nephrectomy is preferred if all of the following criteria are met: 1) high tumor complexity and partial nephrectomy would be challenging even in experienced hands; 2) no preexisting CKD or proteinuria; and 3) normal contralateral kidney.... (Expert Opinion)". Therefore, radical nephrectomy is preferred over partial nephrectomy for this patient. Thermal ablation has a much lower success rate for tumors over 3.0 cm in size and the mass is larger than those typically recommended for active surveillance.

Campbell S, Uzzo RG, Allaf ME, metal: Renal mass and localized renal cancer: AUA GUIDELINE. Updated May 2017.
http://www.auanet.org/Documents/education/clinical-guidance/Renal-Mass-Localized-Renal-Cancer.pdf

Campbell SC, Lane BR: Malignant renal tumors, in Wein AJ, Kavoussi LR, Novick AC, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 57, p 1345.

Question #78 **ANSWER=C**

While neurological disease can cause dyssynergy of the bladder and either the internal or external sphincters (or both), only lesions in the spinal cord above the lower thoracic level of the sympathetic outflow may result in detrusor internal sphincter dyssynergia. Because the internal sphincter is primarily smooth muscle, dantrolene, baclofen, and diazepam, all of which affect skeletal muscle, would not be expected to have much effect. Phenoxybenzamine is a non-selective alpha-antagonist that affects both alpha-1 and alpha-2 receptors. While phenoxybenzamine could be a theoretically appropriate option, the side effect profile that affects 30% of patients and can include orthotopic hypotension, reflex tachycardia, sedation, and emesis, makes it less desirable. Additionally, there has been evidence of mutagenic activity following repeat administration in animals. Tamsulosin, a highly selective alpha-1-antagonist, relaxes the smooth internal sphincter and is the best option of those listed.

Andersson KE, Wein AJ: Pharmacologic management of lower urinary tract storage and emptying failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 79, pp 1873-1874.

Wein AJ, Dmochowski RR: Neuromuscular dysfunction of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 75, pp 1771-1772.

Question #79 **ANSWER=C**

Patients with horseshoe kidneys and stone burden > 1.5 cm are best managed with PCNL. If stone burden is < 1.5 cm, both SWL and ureteroscopy have been successful, but the single procedure stone clearance rates are lower than those reported with PCNL. The approach for PCNL is usually through a superior, posterior calyx in a horseshoe kidney. Laparoscopic or open pyelolithotomy would be not be indicated and may be technically difficult due to aberrant vasculature.

Matlaga BR, Krambeck AE, Lingeman JE: Surgical management of upper urinary tract calculi, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 54, p 1260.

Question #80 **ANSWER=D**

The perioperative management of patients with drug eluting stents (DES) is decided in a multidisciplinary manner by the patient's cardiologist, surgeon, and anesthesiologist. Surgical hemorrhagic risk and the thrombotic risk of the DES needs to be considered. The risk of stent thrombosis should be weighed against the risk of bleeding. As a general approach, all elective surgical procedures should be delayed by at least six months and ideally, 12 months after DES placement. If surgery cannot be delayed due to urgency, minimizing the time off of dual antiplatelet therapy with aspirin and thienopyridines is important as the risk of stent thrombosis (ST) is significantly increased. Patients undergoing surgical procedures 12 months after percutaneous cardiac intervention are likely at a lower risk of perioperative ST and major cardiac events. Maintaining dual antiplatelet therapy should be continued if the risk of perioperative bleeding is acceptable. Maintaining single antiplatelet therapy with aspirin applies to patients without concomitant risk factors of ST undergoing surgery more than 12 months after percutaneous cardiac stent placement.

Culkin DJ, Exaire EJ, Green D, et al: Anticoagulation and antiplatelet therapy in urologic practice: ICUD AND AUA REVIEW PAPER. Published 2014. http://auanet.org/guidelines/anticoagulation-and-antiplatelet-therapy

Abualsaud AO, Eisenberg MJ: Perioperative management of patients with drug-eluting stents. J AM COL CARDIOL INTV 2010;3:131-142.

Question #81 **ANSWER=E**

The presence of a bulbocavernosus reflex (BCR) indicates an intact sacral arc reflex. A positive BCR would be represented by increased EMG activity and pelvic floor contraction upon squeezing of the clitoris (or gently pulling on an indwelling urethral catheter). It is present in most (70%) but not all neurologically intact women. Therefore, lack of a BCR is not an abnormal finding in a neurologically intact woman. A faulty EMG reading is unlikely since there is appropriate recruitment with coughing.

Kobashi KC: Evaluation and management of women with urinary incontinence and pelvic prolapse, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 71, p 1701.

Question #82 **ANSWER=E**

Venous gas embolism is a rare but potentially fatal complication of percutaneous renal surgery. The gas (in this case, air) enters the venous system and passes through the right heart into the pulmonary circulation, blocking the output of the right heart, which results in hypoxemia, hypercapnia, and depressed cardiac output. Venous gas embolism is indicated by hypoxemia, hypotension, dysrhythmias, and auscultation of a mill-wheel cardiac murmur. Swift response is required and includes positioning the patient head down with the right side up. Removal of the ureteral catheter is not necessary. Administration of hydrocortisone would be indicated in the face of acute allergic reaction, and administration of a broad spectrum antibiotic would be indicated in the face of sepsis. Although returning the patient to a supine position from a prone position can assist in resuscitation measures, this would not be the proper maneuver for a venous gas embolism.

Wolf JS Jr: Percutaneous approaches to the upper urinary tract collecting system, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 8, p 153.

Question #83 ANSWER=D

Proteus species are most commonly associated with struvite stones. However, more than 90% of S. aureus organisms produce urease, and are, therefore, associated with struvite stones. The remainder of the bacteria listed are not associated with urease production.

Pearle MS, Antonelli JA, Lotan Y: Urinary lithiasis: Etiology, epidemiology, and pathogenesis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 51, pp 1194-1195.

Question #84 ANSWER=C

All gunshot wounds of the genitalia require surgical exploration to assess and stage the injury, clean the wound, and if appropriate, attempt repair. With a low velocity gunshot wound to the anterior urethra, primary surgical repair is indicated. Catheter realignment is associated with a higher stricture rate than primary repair. Suprapubic diversion is reserved for blunt trauma to the anterior urethra or a high velocity penetrating injury. Primary closure of the urethra is the best option when the defect is small. When the defect is larger, one should consider a staged repair: debride and mature the injured segment to the skin and then return in six months to reconstruct the urethra. Urethroplasty with graft or flap in the compromised tissue of a recent gunshot wound leads to a higher stricture rate as compared to primary repair.

Morey AF, Zhao LC: Genital and lower urinary tract trauma, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 101, p 2381.

Morey AF, Brandes S, Dugi DD, et al: Urotrauma: AUA GUIDELINE. Published April 2014. https://www.auanet.org/guidelines/urotrauma-(2014-amended-2017)

Question #85 ANSWER=E

Using the last image hold feature has been shown to reduce radiation exposure by reducing the number of repetitive images. Positioning the radiation source of the C-arm under the operating table reduces exposure to the surgeon by reducing scatter radiation but does not change patient exposure. Boosted images and continuous imaging both increase radiation exposure. Giving the fluoroscopy pedal to the surgeon to limit imaging can reduce patient radiation exposure.

AUA UNIVERSITY CORE CURRICULUM: Radiation safety. Updated December 2016. https://university.auanet.org/core_topic.cfm?coreID=71

Question #86 **ANSWER=C**

The motor and sensory responses noted are consistent with incorrect placement of the lead into the S2 foramen. The lead should be removed, replaced one foramen lower (S3), and re-tested. Placing the lead deeper or in a more shallow position will not result in appropriate stimulation. Correct placement of the lead into the S3 foramen will result in a bellows reflex, contraction of the perineal area, and plantar flexion of the ipsilateral great toe.

Vasavada SP, Rackley RR: Electrical stimulation and neuromodulation in storage and emptying failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 81, pp 1912-1914.

Question #87 **ANSWER=D**

There are many options to image a stone in an asymptomatic patient. For an obese patient, the imaging study with the highest sensitivity is a non-contrast CT scan. Renal ultrasound is less sensitive for stones in the distal ureter, so is not the preferred option. A KUB is utilized in follow-up if the calculus was identified on CT scout film or KUB at time of diagnosis, or if the initial location of the stone was over the sacroiliac area. As such, KUB will not be helpful in this patient. Low-dose non-contrast CT scan is not recommended in patients with a BMI over 30 due to reduced sensitivity. Ureteroscopy should not be performed until a repeat non-contrast CT scan confirms the presence of a persistent stone.

Fulgham PF, Assimos DG, Pearle MS, Preminger GM: Clinical effectiveness protocols for imaging in the management of ureteral calculous disease: AUA technology assessment: AUA GUIDELINE. Published 2012.
https://www.auanet.org/guidelines/imaging-for-ureteral-calculous-disease

Question #88 **ANSWER=A**

Voiding dysfunction and incontinence are common in boys with history of PUV. Over 80% will struggle with incontinence at age five. Placing a catheter at night (overnight bladder drainage) is usually indicated in the presence of high urinary output which can occur in boys with a history of PUV secondary to a renal concentrating defect. In such patients, significant hydroureteronephrosis is expected, which this patient does not have. Since he is not retaining urine after voiding, a urodynamic study will likely demonstrate a pattern of bladder overactivity. However, it is appropriate to try conservative measures such as timed voiding prior to proceeding with more invasive testing such as urodynamics. Antimuscarinics must be used with caution since a possible underlying myogenic dysfunction could lead to outright urinary retention. Desmopressin will not affect bladder dysfunction, which is the primary etiology of incontinence in boys with PUV.

Shukla AR: Posterior urethral valves and urethral anomalies, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 141, p 3252.

Question #89 **ANSWER=B**

Sipuleucel-T immunotherapy is an FDA approved agent in the setting of asymptomatic or minimally symptomatic metastatic castration-resistant prostate cancer (CRPC) based on results of the IMPACT trial, published in 2010. In this randomized double-blind placebo controlled trial, sipuleucel-T was associated with a 22% relative risk reduction of death, and a four month improvement in median survival (25.8 versus 21.7 months). Notably, clinical and radiographic responses are rare with this agent, so patients should be told not to expect a decline in PSA or improvement in bone scan. According to the CRPC AUA Guideline, sipuleucel-T should not be offered to patients with symptomatic metastatic CRPC, those who have received prior docetaxel chemotherapy, poor performance status, or those who do not have metastatic disease.

Kantoff PW, Higano CS, Shore ND, et al: Sipuleucel-T immunotherapy for castration-resistant prostate cancer. NEJM 2010;363:411.

Cookson MS, Roth BJ, Dahm P, et al: Castration-resistant prostate cancer: AUA GUIDELINE. Amended 2018.
https://www.auanet.org/guidelines/prostate-cancer-castration-resistant-(2013-amended-2018)

Question #90 **ANSWER=B**

Radical pelvic surgery can result in a lower motor neuron lesion and permanent voiding dysfunction. The most common urodynamic findings include an acontractile or underactive detrusor and fixed striated sphincteric tone (which can often lead to obstruction). In addition, this often results in a poorly compliant bladder. The smooth sphincter may be open and non-functional. Voiding dysfunction and a similar urodynamic pattern may be seen after other radical pelvic surgeries as well and the incidence of this occurring is: abdominoperineal resection: 20-68%; radical hysterectomy: 16-80%; anterior resection: 20-25%; proctocolectomy: 10-20%.

Wein AJ, Dmochowski RR: Neuromuscular dysfunction of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 75, pp 1781-1782.

Question #91 **ANSWER=E**

Rectal injuries, although uncommon during primary radical prostatectomy (1-3%

incidence), have a higher risk when the prostatectomy is performed in the salvage setting (6-15%). Intraoperative recognition and repair of the injury is crucial. In the previously irradiated pelvis, it is advisable to perform a temporary diverting colostomy at the time of primary repair due to the increased risk of wound breakdown and rectourethral fistula formation. The other options listed involve primary repair only without bowel diversion. TPN should not take the place of a diverting colostomy. Although these may be appropriate alternatives for many patients experiencing a rectal injury (especially primary repair with omental interposition) during primary radical prostatectomy, these are not advisable without a diverting colostomy in the patient who has received prior radiotherapy for prostate cancer.

Su LM, Gilbert SM, Smith JA, Jr: Laparoscopic and robotic-assisted laparoscopic radical prostatectomy and pelvic lymphadenectomy, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 115, p 2681.

Velilla G, Redondo C, Rozet F, Sanchez-Salas R, Cathelineau X: Visceral and gastrointestinal complications in robotic urologic surgery, in Sotelo R, Arriaga J, Aron M (eds): COMPLICATIONS IN ROBOTIC UROLOGIC SURGERY, ed 1. Springer, 2018, chap 13, p 119.

Question #92 **ANSWER=E**

Patients with prolonged surgery in the lithotomy position are at risk of developing compartment syndrome. This patient is demonstrating many of the early symptoms and signs of compartment syndrome including pain disproportionate to clinical findings, as well as pain on passive stretching of the involved compartmental muscle group, tender and tense calves, and numbness or paraesthesias. Late symptoms include loss of arterial pulses and paralysis. A high index of suspicion and rapid diagnosis and treatment is needed since compartment syndrome is a progressive condition resulting in rhabdomyolysis, nerve damage to the limb, renal failure, and can progress to multi-organ failure and death. Following identification of elevated intracompartmental pressures, immediate fasciotomies are the definitive treatment. Other considerations in this patient include a deep vein thrombosis or a neuropraxia, which can be evaluated with Doppler ultrasound or an EMG; however, given the clinical scenario and timing, compartment syndrome is more likely and if present requires treatment immediately. A CT or MRI scan would not be the initial investigations performed in a patient with this symptom complex.

Raza A, Byrne D, Townell N: Lower limb (well leg) compartment syndrome after urological pelvic surgery. J UROL 2004;171:5-11.

Akhavan A, Gainsburg DM, Stock JA: Complications associated with patient positioning in urologic surgery. UROL 2010;76:1309-1316.

Question #93 ANSWER=B

According to the AUA Overactive Bladder Guidelines, second line therapy (antimuscarinics or beta-3-agonists, such as mirabegron) is considered after failure of first line therapy (behavioral therapy). PVR may provide additional information. but is not part of the necessary next steps according to the Guidelines. The update to the Guidelines in 2014 added beta-3-agonists as part of the new treatment algorithm. It is premature to do urodynamics. Cystoscopy would likely be unremarkable in a patient with a negative urinalysis and is not indicated. Sacral neuromodulation is third line therapy (as is onabotulinumtoxinA and tibial nerve stimulation) and would be considered after second line therapy has failed.

Gormley EA, Lightner DJ, Burgio KL, et al: Diagnosis and treatment of overactive bladder (non-neurogenic) in adults: AUA/SUFU GUIDELINE. Published May 2014.
https://www.auanet.org/guidelines/incontinence-non-neurogenic-overactive-bladder-(2012-amended-2014)

Question #94 ANSWER=C

This is an example of an analysis of variance (ANOVA) multi-variable model where there are two or more independent variables and one dependent variable. Another way of stating this is that ANOVA statistical designs are appropriate when a study compares three or more groups or repeated measures. The t-test is the analysis of independent measures. The most common t-test compares means from two independent or different groups. In the setting of a trial with only a binary variable, a Fisher's exact test specifically should be used when the number of subjects in any subgroup is less than five. Both the multi-factorial ANOVA and multiple linear regressions are multi-variable models. The ANOVA statistical tests are specific examples of a multiple regression; however, results reported from an ANOVA analysis are generally more intuitive, and for this reason ANOVA models are typically the first choice for analyzing data from group designs. The Pearson correlation coefficient is the appropriate test when assessing the relationship between two variables.

Statistics: AUA UNIVERSITY CORE CURRICULUM. Updated November 2017. https://university.auanet.org/core_topic.cfm?coreID=122

Question #95 ANSWER=E

Ammonia excreted in the urine is readily re-absorbed when the urine is in contact with bowel epithelium. In patients with significant liver dysfunction and elevated ammonia levels, this re-absorption can contribute to the associated risk of encephalopathy. Therefore, in this woman with a continent reservoir and probable hepatic encephalopathy, the most appropriate next step is to place a catheter in her reservoir to maximize urinary drainage. Sodium bicarbonate, calcium gluconate, and hydrocortisone will not address hepatic encephalopathy. In the absence of clinical signs suggestive of pouch rupture, a pouchogram is unlikely to be informative.

Dahl DM: Use of intestinal segments in urinary diversion, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 97, p 2311.

Coloma E, Prieto-González S, López-Giraldo A, et al: Hyperammonemic encephalopathy due to a urinary diversion: An uncommon cause of reversible dementia. J AM GERIATR SOC 2011;59:930-932.

Question #96 ANSWER=B

This patient is demonstrating symptoms of urosepsis. This may occur during fragmentation of a staghorn infectious stone despite a negative urine culture preoperatively. Cultures of "infection stone" fragments obtained from both the surface and inside of the stone have demonstrated that bacteria reside within the stone, thereby causing the stone itself to be infected. Continuation of the PCNL may only liberate more bacteria and endotoxin and result in further bacteremia. Urosepsis may be fatal. The procedure should be aborted immediately. Autonomic hyperreflexia may occur in patients with thoracic spine injuries and distended bladders but presents with hypertension and reflex bradycardia. The patient could have significant bleeding that would result in hypotension and tachycardia, and transfusion may be appropriate, but given the possibility for urosepsis, the next step would be to stop the operation. Placement of a larger access sheath would not be beneficial at this time, but it is important to have an access sheath that permits egress of irrigant. In this situation, the rate of irrigant flow will not affect her hemodynamic state.

Pearle M, Matlaga B: Surgical stone disease: AUA UNIVERSITY CORE CURRICULUM. Updated 2017.
https://university.auanet.org/core_topic.cfm?coreID=83

Preminger GM, Assimos DG, Lingeman JE, et al: Staghorn calculi: Report on the management of Staghorn calculi: AUA GUIDELINE. Updated May 2017.
http://www.auanet.org/Documents/Guidelines/Staghorn-Calculi-Archived.pdf

Question #97 ANSWER=B

The urodynamic study demonstrates good bladder capacity and compliance for his age, and there should be no need to begin anticholinergics. In this patient, the most common reason for development of bilateral hydronephrosis after successful ileocystoplasty is poor compliance with his catheterization schedule or technique. With poor catheterization compliance or technique, placement of an indwelling catheter, with subsequent renal ultrasound after a week or two, should demonstrate improved hydronephrosis. It will also permit easier determination of 24-hour urine volume if high urine output is expected. Increasing the frequency of catheterization does not address the concern of poor adherence to a catheterization schedule. If hydronephrosis persists, the next step may involve nuclear renal scan to rule out the unlikely development of bilateral upper tract obstruction.

Adams MC, Joseph DB, Thomas JC: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 145, p 3366.

Question #98 **ANSWER=A**

Approximately 75% of patients with renovascular fistulae have an abdominal bruit. The management of renal arteriovenous fistulae depend on the cause of the fistula and the associated clinical manifestations. Fistulae due to renal cell carcinoma warrant nephrectomy. Approximately 70% of fistulae occurring after needle biopsy of the kidney close spontaneously within 18 months, thus, expectant management is an appropriate first step. Warfarin is not indicated as this patient does not have a thrombosis. Vascular stent or embolization would not be the appropriate initial step without first observing the fistula in an attempt for spontaneous closure.

Shapiro E, Telegrafi S: Anomalies of the upper urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 130, p 2999.

Question #99 **ANSWER=B**

Ultrasonography is a suboptimal imaging modality for detecting and fully characterizing adrenal lesions. An unenhanced CT scan is the recommended first study to evaluate an adrenal lesion as this imaging modality is easily interpretable and provides perhaps the best assessment of intracellular lipid. Non-contrast CT scan can diagnose an adrenal adenoma in more than 70% of cases (specifically, low attenuation, < 10 Hounsfield units [HU]) on unenhanced CT which corresponds to high intracytoplasmic lipid content and is diagnostic for an adrenal adenoma. 98% of lesions with an attenuation of 10 HU or less on non-contrast CT are adrenal adenomas. Less than 30% of adrenal adenomas are lipid-poor (also known as "atypical adenomas") and have an attenuation of > 10 HU. For such lesions which demonstrate an attenuation of > 10 HU, additional radiological evaluation can be performed including CT washout study (consisting of non-contrast, one minute post-contrast, and 15 minutes post-contrast scans) to help discriminate lipid poor adenomas from other adrenal lesions. The diagnostic information from a single-phase enhanced CT scan for adrenal lesions is quite limited, as there is considerable overlap in post-contrast attenuation of adenomas and non-adenomas. Gadolinium-enhanced MR washout studies do not exhibit the diagnostic strength of iodine-based CT washout studies, and are not commonly employed. When MRI is used, opposed phase chemical-shift MR imaging to evaluate for intracellular lipid content can help distinguish an adenoma from other adrenal lesions. The role of adrenal mass biopsy is quite limited, as biopsies cannot reliably distinguish adenomas from adrenal carcinomas. Biopsies are primarily indicated in patients with a separate primary malignancy to identify the presence/absence of metastatic disease in the adrenal gland, and are not recommended prior to appropriate radiographic characterization (i.e., non-contrast CT). It would not be appropriate to watch a 3 cm adrenal mass without further imaging characterization using non-contrast CT scan, which, in addition to the limitations of ultrasound as an imaging modality for adrenal lesions, render a repeat ultrasound in six months not a good option here.

Kutikov A, Crispen PL, Uzzo RG: Pathophysiology, evaluation, and medical management of adrenal disorders, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 65, pp 1567-1569.

Question #100 **ANSWER=C**

Local recurrence after tumor ablation represents treatment failure, and occurs in 3-10% after percutaneous cryoablation and 5-20% after radio frequency ablation. Recurrence or persistence of tumor is usually evidenced by persistent central enhancement in the tumor bed. Most local recurrences can be managed by repeat ablative therapy. In this patient with renal insufficiency and tumor location amenable to repeat cryotherapy, that would be the repeat treatment of choice. Observation would be an option, but this tumor is high-grade, and therefore, warrants complete and/or curative treatment. Biopsy is not necessary given the previously positive biopsy and persistent enhancement of the lesion. Partial nephrectomy would be more challenging after cryoablation and would likely result in more renal compromise than repeat cryotherapy, and radical nephrectomy is likely to result in the requirement for dialysis.

Campbell SC, Lane BR: Malignant renal tumors, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 57, pp 1349-1351.

Campbell S, Uzzo RG, Allaf ME, et al: Renal mass and localized renal cancer: AUA GUIDELINE. Updated May 2017.
http://www.auanet.org/Documents/education/clinical-guidance/Renal-Mass-Localized-Renal-Cancer.pdf

Question #101 **ANSWER=C**

One must assure that this patient has muscle twitches and is not under neuromuscular blockade. Placing the lead in S3 without responses carries the risk of the lead not working or untoward stimulation patterns. Changing pulse width and bipolar settings would not help. Moving the lead to S2 is not standard therapy and would not stimulate the appropriate nerves. Aborting the case would be premature at this point and would not benefit the patient.

Vasavada SP, Rackley RR: Electrical stimulation and neuromodulation in storage and emptying failure, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 81, p 1900.

Question #102 ANSWER=C

This patient has Klinefelter's syndrome based on physical description and testicular exam. The most common karyotype will be 47,XXY. This is associated with hyalinization of seminiferous tubules, leading to small firm testicles and severe subfertility. Leydig cells are present, but testosterone production is abnormally low, with elevated estradiol levels. This leads to poor secondary male sexual development and gynecomastia. These patients are at increased risk of extragonadal germ cell tumors, Leydig and Sertoli cell testicular tumors, and have a marked increased risk of breast cancer, requiring lifelong surveillance after puberty. Recent data has demonstrated decreased verbal skills, and frontal executive function and cognitive skills in Klinefelter's patients.

Diamond DA, Yu RN: Disorders of sexual development: Etiology, evaluation, and medical management, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 150, p 3478.

Question #103 ANSWER=D

Patients who present with new onset, worsening irritative voiding symptoms and incontinence following uneventful robotic prostatectomy can often be passed off as experiencing normal postoperative recovery of urinary continence and be prescribed pelvic physiotherapy and anticholinergic medications. However, in the setting of having undergone a pelvic lymphadenectomy, the possibility of a pelvic lymphocele should be ruled-out. Pelvic lymphoceles can cause compression of the bladder resulting in reduced capacity and increased urinary frequency and urgency. Further treatments aimed at his LUTS would be considered if a lymphocele is not found on imaging. Antibiotics would be initiated if the urine culture is positive. There is no indication for cystoscopy at this time.

Su LM, Gilbert SM, Smith JA Jr: Laparoscopic and robotic-assisted laparoscopic radical prostatectomy and pelvic lymphadenectomy, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 115, p 2683.

Question #104 ANSWER=A

The flap valve mechanism of the appendicovesicostomy can result in occlusion with over-distention and elevated bladder pressures. Percutaneous aspiration in this patient may result in decompression and subsequently permit catheter passage via the appendicovesicostomy. In some patients, this may be performed under local anesthesia with sedation and avoid the need for general anesthesia. Cystoscopy would likely require general anesthesia and can be difficult after a sling procedure and bladder neck reconstruction. Endoscopy of the appendix in this situation is less likely to be successful with a full bladder and runs the risk of injury to the appendix. Open suprapubic tube placement may be required, but is more invasive than percutaneous aspiration. Revision of the appendicovesicostomy is premature in this patient.

Adams MC, Joseph DB, Thomas JC: Urinary tract reconstruction in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 145, pp 3361-3364.

Question #105 **ANSWER=E**

Bladder preservation strategies with use of either radical TURBT and chemotherapy or trimodality therapy with TURBT, chemotherapy, and radiation therapy, have been utilized in many clinical scenarios, usually reserved for elderly patients with more comorbidities and limited life expectancy. However, these strategies are being increasingly utilized in the healthier population as the outcomes for bladder preservation in certain subsets appear favorable. Additionally, various strategies of types of chemotherapy and radiation doses have been utilized. The RTOG (Radiation Therapy Oncology Group) has defined various protocols for chemoradiation and bladder preservation. Typically, patients receive two cycles of chemotherapy with concomitant radiation therapy, and then undergo a mid-cycle transurethral resection for response assessment. If there is persistent disease, then the recommendation for cystectomy is given at that time. If there appears to be an adequate response, then completion of chemoradiation therapy is recommended. In this case, persistent T1 disease at the mid-cycle evaluation indicates an inadequate response to induction therapy and salvage radical cystoprostatectomy is indicated. Repeat transurethral resection after finding T1 disease at mid-cycle is not recommended, nor is changing chemotherapy or increasing planned radiation therapy dosing. Completing standard chemoradiation therapy protocols in the setting of active invasive disease would result in delayed treatment of resistant disease. BCG has been used to treat delayed recurrence of non-muscle invasive bladder cancer after trimodal therapy, but not when this occurs at the mid-treatment evaluation.

Guzzo TJ, Vaughn DJ: Management of metastatic and invasive bladder cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 94, pp 2234-2235.

Chang SS, Bochner BH, Chou R, et al: Treatment of non-metastatic muscle-invasive bladder cancer: AUA/ASCO/ASTRO/SUO GUIDELINE. Updated December 2016. http://www.auanet.org/documents/education/clinical-guidance/Muscle-Invasive-Bladder-Cancer.pdf

Question #106 **ANSWER=A**

Videourodynamics would allow for evaluation of bladder storage function (detrusor overactivity, compliance) and competence of the outlet. These findings would allow for appropriately directed therapy, such as onabotulinumtoxinA injections into the native bladder, augment revision, and outlet enhancing procedures. Cystoscopy can be performed if videourodynamics are normal.

Nitti VW, Brucker BM: Urodynamic and video-urodynamic evaluation of the lower urinary tract, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 73, pp 1741-1742.

Question #107 **ANSWER=D**

The most common source of bleeding after division of the renal hilum on the left is a lumbar vein. The lumbar vein lies posteriorly as it inserts into the renal vein. When ligation is too proximal towards the inferior vena cava, this vein can be encountered. The testicular and adrenal vein may cause bleeding but usually are well visualized. Anatomically, the posterior and anterior branches of the renal artery are included with ligation of the hilum unless this occurs too close to the kidney.

Elkoushy MA, Andonian S: Surgical, radiologic, and endoscopic anatomy of the kidney and ureter, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 42, p 972.

Question #108 **ANSWER=B**

Given that the symptoms are bothersome, observation is not appropriate. There are several therapies that are non-invasive and safe even in an elderly man with significant comorbidities. When the predominant urinary symptom is nocturia, AUA Guidelines on BPH recommend that a voiding diary (frequency-volume chart) be completed. One should consider that nocturia may represent nocturnal polyuria or nocturnal frequency, with two different treatment pathways. One pathway would be to reduce fluid consumption in the evening, but it is premature to recommend that without first performing a voiding diary. Serum PSA is part of the guideline-recommended evaluation of LUTS, but is not indicated when life expectancy is less than ten years. Desmopressin and oxybutynin should not be instituted without first performing a voiding diary. In addition, oxybutynin would be a suboptimal choice in a patient of this age and with an elevated PVR.

McVary KT, Roehrborn CG, Avins AL, et al: Prostatic hyperplasia benign prostatic hyperplasia. AUA GUIDELINE. Updated December 2016.
http://www.auanet.org/documents/education/clinical-guidance/Benign-Prostatic-Hyperplasia.pdf

Question #109 **ANSWER=A**

Pessary trial is a minimally invasive way to help discern the next step in this patient whose POP-Q examination is consistent with anterior vaginal wall laxity to the hymenal ring. If the urgency urinary incontinence improves, then one can consider continued pessary use or prolapse repair to more definitively correct her problem. If the pessary does not help, one can consider sacral neuromodulation or other options for refractory overactive bladder. Self-catheterization would be premature to consider, especially with a PVR of 75 mL. Since she does not have symptomatic prolapse (bulge, pressure), cystocele repair would be best considered after some assurance that the prolapse correction would result in improvement in her LUTS. Sacrocolpopexy is not indicated as this is for apical prolapse and based on her POP-Q, she does not have apical laxity with a C point of -6.

de Boer TA1, Salvatore S, Cardozo L, et al: Pelvic organ prolapse and overactive bladder. NEUROUROL URODYN 2010;29:30-39.

Question #110 **ANSWER=D**

Persistent urinary drainage after an unstented pyeloplasty is common, and will often require intervention. When this is associated with a large blood clot, and likely edema at the anastomosis, the kidney will need early drainage until the bleeding resolves and edema improves. This is best managed with a nephrostomy tube, as stent placement in this young infant would likely result in stent occlusion from the renal pelvic blood clot. In the majority of cases not associated with an occlusive blood clot, the leak will resolve spontaneously, so observation is the best approach in the early postoperative period in these patients. If the leak is persistent and not associated with a consolidated clot, it would most likely resolve with retrograde stent placement. Renal scan would not change management at one week. Early re-exploration would also not be indicated in this setting that is usually able to be managed with a minimally invasive approach.

Olsen LH, Rawashdeh YFH: Surgery of the ureter in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 133, p 3066.

Question #111 **ANSWER=B**

Candiduria is a common condition, particularly in patents with urinary catheters, diabetes, and recent antibiotic use. Candiduria is often asymptomatic and usually follows a benign clinical course. In patients with indwelling catheters, the catheter should be changed and repeat culture should be performed. Persistent candiduria requires work-up for predisposing factors, including PVR assessment to exclude urinary retention, and renal ultrasound to look for hydronephrosis, urolithiasis, fungus balls, and renal abscesses. If no predisposing factors are identified, then observation with repeat culture is appropriate (one to three months). Patients with symptomatic candida cystitis should be treated. Blood cultures for fungi should be obtained in critically ill ICU patients with persistent funguria. First-line therapy is oral fluconazole, 200 mg daily for 14 days. Nearly all urine isolates of Candida albicans and most isolates of Candida glabrata are susceptible to fluconazole. In patients with resistant strains, flucytosine or Amphotericin B may be used.

Thomas L, Tracy CR: Treatment of fungal urinary tract infection. UROL CLIN N AM 2015;42:473-483.

Question #112 ANSWER=A

The following are the recommended tests for basic management of LUTS in men per the AUA BPH Guidelines: relevant medical history, assessment of LUTS severity and bother (i.e., AUA-Symptom Score index), and physical examination including DRE and urinalysis. He has satisfied criteria for being offered treatment options. Flow rate, PVR, and pressure-flow studies are optional tests, and would be helpful for persistent bothersome LUTS after basic management has failed. Assessment of prostate size with cystoscopy or other modalities, such as TRUS and MRI scan, should be done if surgical intervention is to be considered.

McVary KT, Roehrborn CG, Avins AL, et al: Benign prostatic hyperplasia benign prostatic hyperplasia. AUA GUIDELINE. Updated December 2016.
http://www.auanet.org/documents/education/clinical-guidance/Benign-Prostatic-Hyperplasia.pdf

Question #113 ANSWER=B

The AUA Guidelines for male urethral stricture call attention to permanent perineal urethrostomy as an option for men with urethral stricture disease who cannot tolerate self-dilation and/or are not good candidates for formal urethroplasty due to comorbidities, advanced age, or urethral disease such as lichen sclerosus. Daily self-dilation would be difficult in this man with Parkinsonian tremor. More complex urethral reconstruction surgeries would offer him little advantage over perineal urethrostomy and expose him to increased perioperative risks and complications.

Wessells H, Angermeier KW, Elliott SP, et al: Male urethral stricture: AUA GUIDELINE. Published April 2016.
https://www.auanet.org/guidelines/urethral-stricture-(2016)

Question #114 ANSWER=A

According to the 2013 AUA Guideline on asymptomatic microscopic hematuria (AMH), evaluation of AMH should include a careful history and physical examination to identify causes that may not require diagnostic work-up. These include vigorous exercise, presence of preexisting medical-renal disease, presence of infection or viral illness, recent menstruation, exposure to trauma, or recent urological procedures. These potential "benign" causes should be ruled-out or treated, and urinalysis repeated, prior to proceeding with diagnostic evaluation. This patient is recovering from a viral illness. If repeat analysis is negative for AMH (in this case 1-2 RBC/hpf), no further evaluation is warranted. Serum and urine creatinine, voided urine cytology, cystoscopy, and CT urogram are not indicated. Annual urinalysis is not recommended as part of routine wellness care for an otherwise healthy 62-year-old male.

Boorjian SA, Raman JD, Barocas DA: Evaluation and management of hematuria, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 9, p 185.

Asymptomatic microhematuria diagnosis, evaluation, and follow-up of asymptomatic microhematuria (AMH) in adults: AUA GUIDELINE. Updated December 2016.
http://www.auanet.org/documents/guidelines/pdf/Asymptomatic-Microhematuria-Algorithm.pdf

Question #115 ANSWER=E

Urinary uric acid is derived from both endogenous and exogenous sources. Diet-derived purines account for an estimated 30% of urinary uric acid. The typical intake of purines in the United States averages 500-1500 mg/day, including both animal and plant sources, although the latter may account for only 20% of the total in most cases. Uric acid stone-forming patients may benefit from limiting "high" and "moderately-high" purine containing foods. Although the reported purine content of foods varies, "high" purine foods are generally considered those containing more than 150 mg/3-ounce serving. These include, specific fish and seafood (anchovies, sardines, herring, mackerel, scallops and mussels), water fowl, organ meats, glandular tissue, gravies and meat extracts. "Moderately-high" sources of purines include other shellfish and fish, game meats, mutton, beef, pork, poultry, and meat-based soups and broths, and soy. Note that an individual may never or only rarely consume "high purine" foods but may habitually consume large portions of foods in the "moderately-high" category. Finally, uric acid crystal formation and growth occur in more acidic urine. Thus, patients with a history of uric acid stones should be counseled to increase the alkali load and decrease the acid load of their diet in an effort to increase urine pH and reduce urinary acidity. Foods conferring an alkali renal load include most fruits and vegetables. Whole milk and yogurt are acid-neutral. Meats, fish, seafood, poultry, cheese, eggs, and grains all confer an acid load.

Pearle MS, Goldfarb DS, Assimos DG, et al: Medical management of kidney stones: AUA GUIDELINE. Published March 2014.
https://www.auanet.org/guidelines/stone-disease-medical-(2014)

Question #116 ANSWER=D

Any tumor spillage increases the tumor stage to at least stage 3. National Wilms' Tumor Study - 3 (NWTS-3) demonstrated that for favorable-histology disease stage 3, 10.8 Gy of abdominal irradiation was as effective as 20 Gy in preventing abdominal relapse if doxorubicin was added to vincristine and dactinomycin. Unfavorable histology with diffuse anaplasia would require additional agents including cyclophosphamide and etoposide.

Ritchey ML, Shamberger RC: Pediatric urologic oncology: Renal and adrenal, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 155, pp 3574-3575.

Question #117 ANSWER=C

The classic presentation of vesicoenteric fistula consists of suprapubic pain, urinary frequency, dysuria, and tenesmus. Colonoscopy and barium enema studies are, in general, less likely to demonstrate the fistula. Cystoscopy has the highest yield in identifying a potential lesion, with some type of abnormality noted on endoscopic examination in more than 90% of cases. However, the findings on cystoscopy are often nonspecific and include localized erythema, papillary, or bullous changes. A definitive diagnosis using cystoscopy can be made in only 35% to 46% of cases. CT scan with contrast is the optimal radiographic modality to demonstrate a vesicoenteric fistula and can also often identify the cause of the fistula (e.g., colon cancer, inflammatory bowel disease, diverticulitis), as well. TUR or bladder biopsy in a patient with inflammatory bowel disease could potentially increase the fistula size. Treatment options such as catheter placement and hyperalimentation would be considered after the CT scan is obtained and a diagnosis is made.

Badlani GH, De Ridder DJMK, Mettu JR, Rovner ES: Urinary tract fistulae, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 89, p 2103.

Question #118 ANSWER=C

PARP inhibitors (poly-adenosine diphosphate [ADP]-ribose polymerase inhibitors) have shown activity in tumors with defects in DNA repair capabilities. Specifically, the PARP inhibitor olaparib is approved for the treatment of ovarian cancer with a BRCA1/2 mutation. PARP inhibitors have produced durable responses in patients with metastatic castration-resistant prostate cancer associated with BRCA2 germline mutations and in the subset of patients with metastatic castration-resistant prostate cancer and somatic gene mutations in DNA repair genes (BRCA1/2, ATM, Fanconi's anemia genes and CHEK2) as detected by next generation sequencing. Drugs such as abiraterone and enzalutamide target the androgen pathway. The mTOR inhibitors temsirolimus and everolimus are approved for the treatment of metastatic kidney cancer. Microtubule inhibitors, including the taxanes (docetaxel), target the mitotic spindle. Tyrosine kinase inhibitors, such as sunitinib, pazopanib, and sorafenib, target tyrosine kinase receptor signaling and are all approved for the treatment of metastatic renal cancer.

Mateo J, Carreira S, Sandhu S, et al: DNA-repair defects and olaparib in metastatic prostate cancer. NEJM 2015;373:1697-1708.

Gonzalgo ML, Sfanos KS, Meeker AK: Molecular genetics and cancer biology, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 19, p 464.

Question #119 ANSWER=C

Donors should be healthy individuals, without diseases that would increase the risk of kidney failure, acute symptomatic infections, ongoing substance abuse, and/or psychiatric disorders such as schizophrenia. GFR should be assessed and be > 80 mL/min. Ideally, BMI should be < 30. Donors must be over age 18 years. In recent years, some transplant centers have accepted donors who have hypertension that is well controlled with a single anti-hypertensive medication.

Gritsh HA, Krishnamurthy V: Renal transplant. AUA UNIVERSITY CORE CURRICULUM. Updated October 2016.
https://university.auanet.org/core_topic.cfm?coreid=85

Question #120 **ANSWER=D**

Palmer's point is used for access when intraperitoneal adhesions are suspected. This is 3 cm below the left costal margin in the midclavicular line. Placement of the Veress needle in the other locations depends on patient position and surgeon preference in patients without prior history of laparotomy. Veress needle placement should not be done in the midline for any patient with a prior midline incision in that area. Veress needle insertion below the right costal margin risks damage to the liver.

Palmer R: Safety in laparoscopy. J REPROD MED 1974;13:1–5.

Ordon M, Eichel L, Landman J: Fundamentals of laparoscopic and robotic urologic surgery, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 10, p 200.

Question #121 **ANSWER=B**

Dynamic radio-guided sentinel node dissection, as opposed to an anatomical or Cabanas sentinel node dissection, when combined with preoperative inguinal ultrasound [and if needed fine-needle aspiration (FNA)] has been found to have a low false negative rate (7%) and less morbidity than an inguinal node dissection when performed in high volume centers. The purpose of performing the initial ultrasound and FNA is to decrease the number of false negative dissections, as in the initial experience dynamic sentinel node dissection failed to identify nodes that were extensively involved with metastatic cancer. The reason for this is that when the sentinel node is extensively involved with cancer, the lymphatic drainage is obstructed so the radio tracer and isosulfan blue drains to an alternate node or does not map at all. The ultrasound and FNA are an effective way to identify these extensively involved nodes but will not identify the microscopically involved sentinel node that the isosulfan blue and radio-colloid locate. The ultrasound and FNA will have no effect on the number of false positive dissections. Ultrasound can evaluate inguinal nodes, but this modality is much less sensitive for the evaluation of pelvic nodes. Pelvic nodes are better staged by cross sectional imaging such as MRI or CT scan. A patient that is identified on preoperative ultrasound-guided FNA to have metastatic cancer in the inguinal nodes would proceed directly to an inguinal node dissection, bypassing sentinel node dissection altogether. If the patient is to have a dynamic sentinel node dissection, the dose of radiotracer injected will not be altered based on the results of the ultrasound.

Pettaway CA, Crook JM, Pagliaro LC: Tumors of the penis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 37, p 864.

Leijte JA, Hughes B, Graafland NM, et al: Two-center evaluation of dynamic sentinel node biopsy for squamous cell carcinoma of the penis. J CLIN ONCOL 2009;27:3325-3329.

Question #122 ANSWER=C

This patient has bothersome prolapse symptoms; however, the vaginal bleeding also needs to be addressed. While one may assume her vaginal bleeding is due to the prolapse, this may not always be the case and mandates an endometrial biopsy. Uterine preservation in this setting, without preoperative assurance of the absence of uterine pathology, could have major consequences. MRI scan would not be a sufficient evaluation for this. Urodynamics would likely not add much to the clinical scenario as she already has a known history of stress incontinence. The prolapsed compartments would need to be addressed with a sacrouteropexy if she wanted to preserve the uterus, provided she does not have abnormal uterine pathology.

Winters JC, Smith AL, Krlin RM: Vaginal and abdominal reconstructive surgery for pelvic organ prolapse, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 83, pp 1977-1978.

Question #123 ANSWER=A

Between 20% and 57% of adolescent and young adult women (< 25 years of age) report pain with intercourse. Sexual pain in older women is most commonly due to vulvovaginal atrophy/genitourinary symptoms of menopause. Estrogen deficiency related to menopause (surgical or natural) is the most common cause of vulvovaginal atrophy in this population. Vaginal atrophy secondary to pelvic radiation has also been reported in the literature. Uterine leiomyoma, endometriosis, and neuroproliferative vestibulodynia are less common causes of dyspareunia.

Shindel AW, Goldstein I: Sexual function and dysfunction in the female, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 32, p 751.

Question #124 ANSWER=C

Checkpoint inhibitors are a new class of drugs that act through the PD-1 and PD-L1

(Programmed death receptor 1 and Programmed death receptor ligand 1) receptor/ligand complex which normally function to inhibit T-cell response. Inhibition of these receptors allow the immune system to recognize and kill tumor cells more effectively. Tyrosine kinase inhibitors, such as sunitinib and pazopanib, target cell surface receptors that are important for signal transduction leading to activation of cellular growth pathways. Mitotic inhibitors, such as taxanes (docetaxel and paclitaxel), inhibit microtubule formation in the mitotic spindle which interferes with chromosome separation during mitosis. Cytokines, such as interleukin-2 and interferon, are small molecules that stimulate the immune system and T-cell function to more effectively target tumor cells. Poly (ADP-ribose) polymerase (PARP) inhibitors, such as olaparib, cause multiple double strand breaks, and in tumors with BRCA1 and BRCA2 mutations, these double strand breaks cannot be efficiently repaired, leading to apoptosis.

Guzzo TJ, Vaughn DJ: Management of metastatic and invasive bladder cancer, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 94, p 2237.

Rouanne M, Roumiguié M, Houédé N, et al: Development of immunotherapy in bladder cancer: Present and future on targeting PD(L)1 and CTLA-4 pathways. WORLD J UROL 2018. doi: 10.1007/s00345-018-2332-5. [Epub ahead of print] Review. PubMed PMID: 29855698.

Donin NM, Lenis AT, Holden S, et al: Immunotherapy for the treatment of urothelial carcinoma. J UROL 2017;197:14-22.

Question #125 ANSWER=A

Linear transducers produce the highest resolution. Sector transducers produce lower resolution but can scan a wide region with a small footprint. Higher frequencies produce better resolution than lower frequency transducers, although the higher frequency has lower tissue penetration and is best for superficial structures. The gain increases the brightness of the image but not the resolution. Pulsed wave Doppler provides velocity information on a timeline from moving objects such as that associated with blood flow.

Kim F, Figler B, Gustafson D: Ultrasound: AUA UNIVERSITY CORE CURRICULUM. Updated December 9, 2016.
https://university.auanet.org/core_topic.cfm?coreID=67

Question #126 ANSWER=A

Total testosterone is the recommended initial test to diagnose hypogonadism. Conditions that increase SHBG (aging, hyperthyroidism, and hepatic cirrhosis), or that decrease SHBG (obesity, diabetes mellitus, and glucocorticoid use), affect testosterone bioavailability. There is no indication for SHBG measurement in various forms of priapism or Peyronie's disease.

Paduch DA, Brannigan RE, Fuchs EF, et al: Laboratory diagnosis of testosterone deficiency. AUA WHITE PAPER. Updated 2013. https://www.auanet.org/Documents/Guidelines/White%20Papers/Testosterone%20Testing%20white%20paper%20updated.pdf

Pugeat M, Crave JC, Tourniare J, Forest MG: Clinical utility of sex hormone-binding globulin measurement. HORM RES 1996;45:148-155.

Question #127 **ANSWER=E**

Oral terbutaline and phenylephrine are not recommended in the management of acute ischemic priapism (> 4 hours) as oral therapies are generally deemed ineffective. Decompression of the corpora cavernosa by aspiration is the recommended initial treatment of ischemic priapism and is the best choice for immediate softening of the erection and pain relief. This treatment alone may be successful in relieving the priapism in 36% of cases and may not only be diagnostic, but therapeutic as well. A corporal blood gas evaluation by aspiration is recommended in the emergency evaluation of priapism and can differentiate ischemic from non-ischemic priapism. Deoxygenated blood with a "crankcase oil" appearance is often observed upon aspiration in ischemic priapism. Blood gas testing will document pH, PO2, and PCO2. If the history suggests penile or perineal trauma, or if the corporal aspirate reveals well-oxygenated blood, penile color duplex Doppler ultrasound (CDU) should be initiated. There is no need for emergent CDU in this case as the findings are consistent with an ischemic presentation.

Broderick GA: Priapism, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 28, pp 679-682.

Question #128 **ANSWER=A**

The couple should be advised to attempt to conceive by natural means. Strict morphology is not a consistent predictor of fertility, and for this reason, the AUA states that strict morphology "should not be used in isolation to make prognostic or therapeutic decisions". While this couple could pursue assisted reproductive techniques, such as intrauterine insemination or in vitro fertilization (without or with ICSI), they might well have success with efforts by natural means. An isolated severely low sperm morphology result is not by itself an indication to proceed to donor sperm.

Jarow J, Sigman M, Kolettis PN, et al: The optimal evaluation of the infertile male: AUA BEST PRACTICE STATEMENT. Updated May 2017. http://www.auanet.org/documents//education/clinical-guidance/Male-Infertility-d.pdf

Kashanian JE, Mazur EJ, Brannigan RE: A primer on modern semen analysis. AUA UPDATE SERIES 2016, vol 35, lesson 33, pp 341-343.

Question #129 ANSWER=B

Two-piece inflatable penile implants do not require placement of a separate reservoir, an attribute that may be useful in cases when placement of the reservoir is challenging because of colostomy, ileostomy, kidney transplant, or extensive pelvic surgery. These devices require fewer squeezes of the pump to reach full capacity. A disadvantage is that the pump is very small and hard, making it difficult for patients to manipulate. Although simpler to insert in many respects, two-piece devices paradoxically require a larger tunical incision. Three-piece implants have a more natural feel, being more rigid when full and more flaccid when empty.

Eid JF: Surgery for erectile dysfunction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 30, p 710.

Question #130 ANSWER=B

Removal of both testes, with the attendant decline of testosterone production, results in an increased pituitary secretion of LH due to loss of the negative feedback loop. In turn, cross-reactivity of LH with beta-hCG may cause falsely positive detections of beta-hCG elevation. As such, the administration of exogenous testosterone should suppress pituitary gonadotropin secretion, and thereby return the measured serum hCG to normal, if in fact the cause of the noted beta-hCG elevation is LH cross-reactivity. Given the relatively low associated risk, this approach should represent the next step in evaluation for this patient. If the beta-hCG returns to normal after exogenous testosterone, the patient should be considered to have stage 1B seminoma, for which the recommended management is surveillance. Considering the potential toxicities of systemic chemotherapy, determining a potential false-positive elevation in markers would be recommended prior to initiating such treatment. Retroperitoneal radiotherapy, while an option for stage 1B seminoma, should not be initiated prior to investigating the marker elevation further as well, and moreover, surveillance has become the recommended strategy for patients with stage 1A/B seminoma. The role of PET imaging in testicular cancer is restricted to the evaluation of residual masses after chemotherapy for seminoma which are greater than 3 cm. RPLND is currently not indicated for clinical stage 1 seminoma.

Stephenson AJ, Gilligan TD: Neoplasms of the testis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 34, p 790.

Question #131 ANSWER=D

Cystinuria, the most common monogenic cause of kidney stones, is caused by mutations of SLC7A9 or SLC3A1, the protein products of which together constitute the proximal tubule's transporter mediating reabsorption of filtered cystine. The primary treatment approach is hydration and alkalinization therapy, followed by chelation therapy with alpha-mercaptoproprionylglycine (tiopronin) or d-penicillamine. Pyridoxine is used to help management of hyperoxaluria in primary hyperoxaluria. Thiazide diuretics are used in conditions of hypercalciuria. Xanthine oxidase inhibitors are used in cases involving uric acid, such as hyperuricemia or hyperuricosuria refractory to dietary purine reduction recommendation. Acetohydroxamic acid is used in cases of infection stones when patients are not appropriate candidates for surgical intervention.

Sayer JA: Progress in understanding the genetics of calcium-containing nephrolithiasis. J AM SOC NEPHROL 2016;28:748-759.

Policastro LJ, Saggi SJ, Weiss JP: Personalized intervention in monogenic stone formers. J UROL 2017;199:623-632.

Lipkin ME, Ferrandino MN, Preminger GM: Evaluation and medical management of urinary lithiasis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 52, pp 1229-1230.

Question #132 ANSWER=A

Two separate trials (one utilizing mitomycin and one utilizing pirarubicin) have demonstrated a significant decrease in the risk of subsequent intravesical recurrence with the use of a single dose of intravesical chemotherapy after nephroureterectomy. Notably, patients from these trials had no prior history of bladder cancer as in this patient. As such, this patient should be offered a dose of intravesical mitomycin C. As BCG has not been reported in such trials, its use in this setting is not recommended. Likewise, adjuvant chemotherapy has not been demonstrated to be of benefit for patients with pT1 urothelial carcinoma. Similarly, radiotherapy is not recommended as there is insufficient data to support a benefit in this setting. Although lymph node dissection may be appropriate at the time of nephroureterectomy for patients with known or suspected high-grade or invasive tumors, a role for delayed lymph node removal has not been established, and therefore, cannot be recommended.

O'Brien T, Ray E, Singh R, et al: Prevention of bladder tumours after nephroureterectomy for primary upper urinary tract urothelial carcinoma: A prospective, multicentre, randomised clinical trial of a single postoperative intravesical dose of mitomycin C (the ODMIT-C Trial). EUR UROL 2011;60:703-710.

Ito A, Shintaku I, Satoh M, et al: Prospective randomized phase II trial of a single early intravesical instillation of pirarubicin (THP) in the prevention of bladder recurrence after nephroureterectomy for upper urinary tract urothelial carcinoma: The THP Monotherapy Study Group Trial. J CLIN ONCOL 2013;31:1422-1427.

Rouprêt M, Babjuk M, Compérat E, et al: European Association of Urology Guidelines on upper tract urothelial carcinoma: 2017 Update. EUR UROL 2018;73:111-122.

Smith AK, Matin SF, Jarrett TW: Urothelial tumors of the upper urinary tract and ureter, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 58, p 1380.

Bladder Cancer: NCN GUIDELINES 2018.
https://www.nccn.org/professionals/physician_gls/pdf/bladder.pdf

Question #133 ANSWER=A

Patients with normal renal function, normal electrolytes, no evidence of fluid overload, and normal mental status should have their vital signs and urine output monitored regularly, and they should be given free access to oral fluids. A 0.45% normal saline at a rate slightly below full replacement may be given if pathologic diuresis occurs. 0.9% normal saline and Lactated Ringer have no role in post-obstructive diuresis and should not be given. COX-2 activity may be increased in the post-obstructive phase and contributes to polyuria, and impaired urine-concentrating ability may be relieved by COX-2 inhibitor, but this intervention is still under evaluation.

Meldrum KK: Pathophysiology of urinary tract obstruction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 48, p 1089.

Question #134 ANSWER=C

Penile prosthesis surgery is indicated for patients with erectile dysfunction and Peyronie's disease. According to the AUA Guidelines on Peyronie's disease, clinicians may perform adjunctive intraoperative procedures, such as modeling, plication, or incision/grafting, when significant penile deformity persists after insertion of the penile prosthesis. Switching to a larger cylinder will not correct the residual curvature and may cause penile buckling. Correction of the curvature and deformity using inflatable prostheses containing reinforced silicone or the material Bio-Flex® is easier than with semi-rigid devices. The presence of a urethral catheter will not impact the degree of curvature. Plaque excision and grafting for a residual 35 degree curvature is excessive and may result in sensory deficits.

Nehra A, Alterowitz R, Culkin DJ, et al: Peyronie’s disease: AUA GUIDELINE. Published April 2015.
https://www.auanet.org/guidelines/male-sexual-dysfunction-peyronies-disease-(2015)

Question #135 ANSWER=B

Studies on sexual function in males with spina bifida have demonstrated that paternity is associated with an L5 or sacral neurologic level. This neurologic level was present in 80%

of patients who fathered children. This is in contrast to bladder function, which does not correlate well to the neurologic level of the lesion. The ambulatory status and presence of a ventriculoperitoneal shunt are other important factors associated with paternity. Serum testosterone levels are usually normal. Reflexogenic erections are present in the majority of spina bifida patients and are not predictive of paternity.

MacLellan DL, Bauer SB: Neuromuscular dysfunction of the lower urinary tract in children, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 4, chap 142, pp 3277-3278.

Question #136 ANSWER=D

This man has non-metastatic castration resistant prostate cancer (CRPC) since his PSA is rising despite adequate androgen deprivation therapy (ADT) and castrate levels of testosterone with a negative metastatic evaluation. Apalutamide is a next-generation anti-androgen that has been found to significantly improve metastasis free survival when compared to placebo for men with non-metastatic CRPC. Apalutamide or enzalutamide are now recommended as first line therapy in the latest version of the AUA Guidelines for non-metastatic CRPC. Bicalutamide is no longer recommended as first line therapy and ketoconazole is no longer recommended for these patients who do not have metastatic disease. Since the patient has castrate levels of testosterone, switching to a LH-RH antagonist is not indicated. Sipuleucel-T is indicated only in the setting of non-symptomatic or minimally symptomatic metastatic CRPC.

Cookson MS, Roth BJ, Dahm P, et al: Castration-resistant prostate cancer. AUA GUIDELINE. Amended 2018.
https://www.auanet.org/guidelines/prostate-cancer-castration-resistant-(2013-amended-2018)

Smith MR, Saad F, Chowdhury S, et al: Apalutamide treatment and metastasis-free survival in prostate cancer. NEJM 2018;378:1408-1418.

Question #137 ANSWER=C

In the immediate postoperative period, retention should be managed by placement of a small, transurethral (10 or 12 Fr) catheter for 24 to 48 hours. At four days after surgery, this patient should no longer continue to have a urethral catheter or be performing CIC immediately after cuff placement. Cuff deactivation should be done at the time of the initial surgery and also confirmed to be deactivated if catheter placement is necessary. If the patient fails a voiding trial at 48 hours, suprapubic tube placement under ultrasound or fluoroscopic guidance is recommended to reduce the risk for urethral erosion associated with prolonged urethral catheter drainage. Retention that persists beyond several weeks implies that the cuff may be too small and, in such cases, re-operation and cuff upsizing may be required. Late-onset urinary retention necessitates cystoscopy and urodynamics to rule-out proximal urethral obstruction, cuff erosion, or detrusor failure.

Wessells H, Peterson A: Surgical procedures for sphincteric incontinence in the male: The artificial urinary sphincter and perineal sling procedures, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 3, chap 91, p 2181.

Question #138 ANSWER=C

Maintaining the three-piece implant reservoir completely filled during the healing period will allow capsule formation around a larger space that will allow storage of an adequate volume of saline. Conversely, if the cylinders are partially filled, the reservoir will not be completely full and the capsule formed around the smaller structure may limit its future expansion and lead to autoinflation. Aggressive weight loss will not result in decreased compression of the reservoir or maintenance of a larger reservoir space in the retroperitoneum. Location of the reservoir will not impact the ability of the capsule to form and impact autoinflation. Similarly, avoiding intercourse for three months will not have a positive impact on preventing autoinflation if the cylinders remain partially filled.

Eid JF: Surgery for erectile dysfunction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 30, p 717.

Question #139 ANSWER=B

This patient has bothersome nocturia as her main complaint. She is not complaining of stress incontinence, hence, no therapy is indicated for her at this time. Therapies for stress incontinence would be considered if she complains of this in the future. With desmopressin preparations, one should carefully monitor serum sodium levels and guidelines recommend this be done at one and four weeks after initiation of therapy. If hyponatremia develops, then one should stop this product immediately. There is a greater risk of hyponatremia in elderly patients. There appears to be a lower risk of hyponatremia in patients with the nasal spray as opposed to oral preparations. It is recommended that elderly patients are started on the lower dose of 0.83 mL (1 Noctiva spray).

https://www.accessdata.fda.gov/drugsatfda_docs/label/2017/201656lbl.pdf

https://www.noctiva.com/wp-content/uploads/2018/04/noctiva-pi.pdf

Question #140 ANSWER=A

The ROSETTA trial was a multi-center, open-label, trial randomizing participants to sacral neuromodulation (SNM) and 200 U of onabotulinumtoxinA. Outcomes of a two-year extension trial have been recently published with outcome data available for 87% of 298 clinical responders. There was no difference in decreased mean urgency urinary incontinence (UUI) episodes, urinary frequency, or differences in complete resolution of

UUI. Women undergoing onabotulinumtoxinA maintained higher satisfaction with treatment. As expected, onabotulinumtoxinA therapy was associated with more UTIs and an increased need for post procedure CIC; however, the overall incidence of adverse events was statistically similar. No differences were seen in the proportions of participants requesting additional medication or alternative trial therapy off protocol post second injection. SNM revision and removals occurred in 3% and 9% patients, respectively. It should be noted that the 200 U dose in this study is double the FDA-approved dose of 100 U for non-neurogenic UUI.

Amundsen CL, Komesu YM, Chermansky C, et al: Pelvic Floor Disorders Network: Two-year outcomes of sacral neuromodulation versus onabotulinumtoxinA for refractory urgency urinary incontinence: A randomized trial. EUR UROL 2018;74:66-73.

Question #141 **ANSWER=C**

Horizontal skin incision for camera port placement and transverse fascial incision for prostate specimen extraction has been associated with a decrease in the risk of incisional hernia from 5.4% to 0.4%. Fascial closure is required for non-bladed trocar sizes of 10 mm or more. There is no evidence that specimen extraction above versus below the umbilicus affects the likelihood of incisional hernia. Squeezing around the specimen through a minimally-sized incision increases the risk of tearing the fascia and subsequent incisional hernia formation. There is some evidence that interrupted versus continuous closure may result in lower risk of incisional hernia, particularly for midline hand-assisted approaches.

Ordon M, Eichel L, Landman J: Fundamentals of laparoscopic and robotic urologic surgery, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 10, p 223.

Question #142 **ANSWER=D**

Hypothermia and circulatory arrest is the treatment of choice for a renal tumor with this level of cephalad extension. This technique has several potential complications such as CNS or hepatic damage. The most common difficulty associated with this technique is hemorrhage associated with platelet and clotting factor dysfunction. Tumor emboli can occur but are relatively uncommon. Utilization of cardiopulmonary bypass limits the possibility of embolic events.

Marshall FF, Dietrick DD, Baumgartner WA, et al: Surgical management of renal cell carcinoma with intracaval neoplasm extension above the hepatic veins. J UROL 1998;139:1166-1172.

Olumi AF, Preston MA, Blute ML Sr: Open surgery of the kidney, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 2, chap 60, pp 1441-1443.

Question #143 ANSWER=C

Two randomized trials demonstrate that allowing men to observe their flexible cystoscopy on a video monitor reduced procedural discomfort. A meta-analysis of 817 patients from nine randomized trials failed to demonstrate a significant reduction in procedural tolerance when comparing lidocaine gel to plain gel. A randomized trial in 151 men demonstrated that increasing hydrostatic pressure while traversing the membranous urethra reduced procedural discomfort. Finally, another randomized trial demonstrated that listening to classical music had a calming effect during flexible cystoscopy and reduced pain, heart rate and blood pressure, while increasing patient satisfaction.

Duty BD, Conlin MJ: Principles of urologic endoscopy, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 7, pp 140-141.

Question #144 ANSWER=D

The 2018 AUA Guideline on the evaluation and management of testosterone deficiency states that the evidence is inconclusive at this time regarding a causal link between testosterone therapy in hypogonadal men and the development of stroke, myocardial infarction, venothrombolic events, and prostate cancer. Among the issues listed, only causal links between testosterone therapy and a greater risk of developing fertility impairment (via spermatogenesis impairment) have been conclusively proven.

Mulhall JP, Trost LW, Brannigan RE, et al: Evaluation and management of testosterone deficiency: AUA Guideline. J UROL 2018 Aug; 200(2) 423-432.

Question #145 ANSWER=A

Early management and diagnosis of penile prosthesis infections can be facilitated by knowledge about the timeline of presentation. The temptation to prescribe antibiotics at the two-week postoperative interval must be resisted as this may mask a developing infection. In this scenario, if the device is not infected, the patient should experience a clinical improvement within the next 7 to 14 days. Conversely, antibiotics will not be helpful if the implant is infected and may merely delay the diagnosis. Systemic and localized signs, such as fever, erythema, swelling, elevated white blood cell count, and incision drainage typically present later and are usually not observed at this postoperative visit. The diagnosis is not aided by imaging studies such as scrotal ultrasound or CT scanning. Drainage of the hematoma will risk infecting a device that may not be infected. The clinical scenario presented does not provide enough information for definitive diagnosis of an early prosthesis infection, and a salvage procedure is, therefore, not indicated at this juncture.

Eid JF: Surgery for erectile dysfunction, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 30, p 718.

Question #146 **ANSWER=B**

Extramammary Paget's disease (EMPD) is a rare adenocarcinoma arising from apocrine gland bearing skin. EMPD should be distinguished from the clinically similar appearing squamous carcinoma-in-situ or Bowen's disease. EMPD has been reported to be associated with an underlying abdominal malignancy in up to 45% of cases, so it is recommended that the patient have a CT scan of the chest/abdomen and pelvis. Some centers also recommend a cystoscopy, colonoscopy, and PSA. The treatment of EMPD is wide local excision (some authors recommend a 3 cm margin) with intraoperative frozen section to ensure negative margins as the tumor frequently extends a significant distance into the adjacent normal appearing skin. Histological evaluation of the resected specimen allows for assessment of any areas of invasion which determines the risk of metastatic disease which can occur in the local inguinal nodes. As EMPD frequently extends well into the adjacent normal skin, local excision of the visible lesion is likely to result in a positive margin and the need for re-excision. There are reports of using the CO2 laser, 5-fluorouracil, and imiquimod cream in EMPD. However, there is little data and the reports have been in patients who have failed or are not good candidates for primary surgical excision.

Ballard TN, Montgomery JS, Kozlow JH: Inguinal and scrotal lesion: Extramammary Paget disease. JAMA ONCOL 2015;1:107-108. doi: 10.1001/jamaoncol.2014.260

Hegarty PK, Suh J, Fisher MB, et al: Penoscrotal extramammary Paget's disease: The University of Texas M.D. Anderson Cancer Center contemporary experience. J UROL 2011;186:97-102.

Pettaway CA, Crook JM, Pagliaro LC: Tumors of the penis, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 37, p 875.

Question #147 **ANSWER=B**

Patients undergoing radical cystoprostatectomy and urinary diversion are at significant risk of thromboembolic complications, and there is good evidence that the combination of intermittent pneumatic compression stockings and either unfractionated or low molecular weight (LMW) heparin decreases this risk. The optimal prophylaxis weighs the benefit of decreasing thromboembolic events with the risk of increased bleeding. There is not complete agreement on the optimal choice of drug or duration of therapy. However, there is increasing evidence that suggests that initiating therapy prior to induction of anesthesia is important. The duration of therapy is also controversial with increasing evidence that therapy should be continued for up to four weeks postoperatively. Either unfractionated heparin or low-molecular weight heparin are suitable choices. The advantage of LMW heparin is that it can be administered once daily. LMW heparin can accumulate in patients with a creatinine clearance less than 30 mL/minute, thus, dose adjustment is necessary. The prophylactic dose of the LMW drug enoxaparin is 40 mg once daily. A 40 mg dosage of enoxaparin is double the prophylactic dose and close to the anticoagulation dose for an 80 kg man. Thus, in a patient with renal insufficiency, the best choice is 5000 IU of unfractionated heparin every 12 hours starting prior to induction of anesthesia until discharge.

Vira MA, Steckel J: Core principles of perioperative care, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 5, p 106.

Tikkinen KAO, Craigie S, Agarwal A, et al: Procedure-specific risks of thrombosis and bleeding in urological non-cancer surgery: Systematic review and meta-analysis. EUR UROL 2018;73:236-241.

Question #148 **ANSWER=B**

Prostate volume is estimated using the following ellipsoid formula: .52 × length × width × height in cm. This equates to .52 x 6 x 7 x 7 = 153 cc. PSA density = PSA / prostate volume (mL) = 15.3/153 = 0.1 ng/mL/cc. PSA density of greater than .15 ng/mL/cc is associated with a greater risk of detecting prostate cancer on biopsy and may trigger earlier biopsy for patients on active surveillance.

Gilbert BR, Fulgham PF: Urinary tract imaging: Basic principles of urologic ultrasonography, in Wein AJ, Kavoussi LR, Partin AW, Peters CA (eds): CAMPBELL-WALSH UROLOGY, ed 11. Philadelphia, Elsevier, 2015, vol 1, chap 3, p 77.

Question #149 **ANSWER=D**

There has been significant interest and study of standardized pathways in patients undergoing radical cystectomy and urinary diversion. The development of ERAS (enhanced recovery after surgery) pathways in urology and colorectal surgery have suggested that preoperative bowel preparation is not necessary, although this has been questioned in recent years. Typical preoperative interventions, which are likely responsible for improved post-surgical recovery, include high carbohydrate diet, omission of a mechanical or antibiotic bowel preparation, and not placing an epidural catheter (replacing an epidural catheter with the use of pain pumps or liposomal bupivacaine). However, these interventions have not been shown to decrease hospital length of stay. The μ-opioid receptor antagonist alvimopan has been shown to accelerate GI recovery and reduce length of hospitalization in patients undergoing radical cystectomy.

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Question #150 ANSWER=B

Urinary retention may happen after bulking agent injection. Usually, an in and out catheterization (with as small a catheter as possible) should be sufficient. The risk of placing an indwelling catheter is that the injectable bulking agent may mold around the catheter, thereby rendering the injection suboptimal. Tamsulosin can be tried, but it may take several days or more to become efficacious. Suprapubic catheter placement or TUR of the bulking agent (rarely indicated) would be premature at this point. If one had to perform TUR for persistent retention, the patient should clearly be informed of the high likelihood of recurrent incontinence.

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